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ROYAL ASIATIC SOCIETY.

CEYLON BRANCH.

ENTOMOLOGICAL PAPERS; BEING CHIEFLY DESCRIPTIONS OF NEW CEYLON COLEOPTERA,

WITH SUCH OBSERVATIONS ON THEIR HABITS, &C., AS APPEAR IN ANY WAY INTERESTING.

BY J. NIETNER, ESQ.,

Member of the Society of Naturalists of Berlin, Entomological Society of Stettin, &c.,

No. I.

Introductory Note on the publication of New Species under disadvantages such as describing Entomologists necessarily labour under in countries remote from European centres of science.

I LITTLE doubt that the following descriptions of new *Coleoptera* will meet with anything but approbation from the Entomological world at home. As, however, in spite of this anticipation of an ungracious reception, I do not for the present intend to desist from my purpose of publishing such descriptions, I may as well try to vindicate this measure by setting forth the reasons which induce me to consider the difficulties which beset the path of the entomological author in this country as not insurmountable.

The objections raised against me will be these:—considering the state Entomological literature is still in—that is to

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say, considering that it has not, generally speaking, been condensed into a certain limited and obtainable number of volumes, as is the case in the higher branches of Zoology and Botany; that, on the contrary, the bulk of it consists of fragments which float without order in the misty and unfathomable ocean of scientific journals; it is next to impossible that an individual entomologist abroad should surround himself with this shapeless mass of learning, and keep himself, by this, or other means, so well informed of the details of the actual progress of the science, as not to be exposed to mistakes of one kind or another, but more specially to creating synonymy * in attempting to work independently. It will further be said against me, that not having the facilities and the wholesome check which arise from the diligent use of extensive and well-named collections, not even having the gratification of a brother entomologist's views and opinions on doubtful cases, it will be impossible even to determine whether an insect be new or not; and from these reasons (the *résumé* will be) entomologists abroad should confine themselves to collecting and observing the habits of the objects of their attention, but

* *Synonymy* is, and always will be, an unavoidable evil to which descriptive science is liable under *any* circumstances. My arguments are merely intended to uphold the possibility to reduce it to such a nature, and to limit it to so small an extent, as to be of little importance if weighed against the merits the publications in which it occurs may be possessed of in other respects, and, therefore, to be pardonable. In case, however, I should eventually ascertain that I am mistaken on this point, I shall then abandon my pursuits, or at all events, my present mode of following them up. I feel certain, that every enthusiastic naturalist, who has travelled in foreign parts, will support my cause, and understand and appreciate my striving to become the herald of my own discoveries.

I am well aware that there is more than one way to attain this end, and that the one I have selected is perhaps not the best; but circumstances have hitherto barred me from those upon which I might lay myself less open to censure. In a position like mine only, where they are my principal support, books are well tested; and whoever has tested them under such circumstances, will know that much of the synonymy created abroad, is referable to them, and *not* to the student.

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they should never go to print with matters on which it is an impossibility for the ablest among them to be quite competent. These arguments are unfortunately too true, but still, I think, admit of being mitigated sufficiently to come to final conclusions less disheartening to the entomological student abroad than the above.

First of all, every entomologist gives preference to a certain order of insects—say *Coleoptera*—and in this even, in almost all cases, to one or two particular families. In studying for the publication of new species, under the disadvantages just mentioned, he will confine himself to this order, or perhaps family. Now, although as objected above, the information existing on this particular branch, is for the most part fragmentary, still there are certain families, on which it has received tangible shape, through condensation by old hands:—Burmeister's *Lamellicornia*, Dejean's *Carabidæ*, Erichson's *Staphylindæ*, Schoenherr's *Curculionidæ*, Boheman's *Cassidæ*, Westwood's *Paussidæ*, etc., as well as the latter author's general work on the families, and Lacordaire's on the general *Coleopterorum*, diligently consulted, go as guides a long way, and should, although some of them have by the rapid progress of the science grown rather antiquated, guard against a number of mistakes of a systematic nature.

As to whether a beetle be new or not, I admit that in forming an opinion on this question, the entomologist, situated as above, will have quite as much to be guided by a certain tact (not clearly definable, but understood by scientific men) than by anything else; and I am forced to concede that under any circumstances almost, it is totally impossible to arrive at an *indisputable certainty* either the one way or the other. This, however, excludes by no means the possibility of his forming an opinion with so much precision as to enable him to pronounce in the matter with a very *high degree of confidence and all probability* in his favour. In attempting to come to a decision on this difficult point, he will receive a first superficial idea, from careful reflection on certain accidental circumstances, such as size, scarcity, or other peculiarities of the insect in question.

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This idea, whichever way it may incline, will then either gain or lose in strength by diligent reference to his library, until at length, with a certain amount of tact and judgment, he will arrive at a result which, under such circumstances, must carry much weight with it.

I shall illustrate this case by an example. If, for instance, after collecting five years in Ceylon generally, and in the Western Province more especially, I find at the latter place an insect—say the *Chlænius pulcher* described below—for the first time—am I not entitled to consider it as very scarce? If on consulting my library I discover nothing which can possibly refer to it (finding that not a single *Chlænius* is marked as occurring in Ceylon), are not the chances greatly in favour of its being an undescribed species? If, again, I collect beetles as small and inconspicuous as the *Trichopteryx* described below, and consider at the same time, that, although they are in certain localities of common occurrence, no professional Coleopterologist has ever collected them before me in this Island; if moreover, again, my library offers nothing that could possibly refer to them individually (there being hardly an Asiatic species mentioned),—am I not under these circumstances justified in considering them as undescribed? Decidedly. Circumstances like these would indeed be altogether conclusive, if there was not a chance of the beetle occurring in some neighbouring country, and its having thence found its way into the normal collections of Europe. The possibility of such being the case, enhances the difficulties of the case of course very materially; and I am forced to admit that the means of overcoming them are very unreliable. One deficiency, descriptions of new species furnished under these circumstances, will almost always have: namely, the comparison (so desirable, if not essential, in large genera) with another allied and known species, will be wanting; but this stands or falls with the system from which it is inseparable.

I think I have said enough to shew, that the disadvantages the entomologist encounters here, or in other places similarly situated, in *conscientiously* attempting to publish new species

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may (his principal assistance being perseverance, a good library, and tact—entomological instinct I am almost tempted to call it)—I am far from saying *entirely*,—be overcome so far as to expose him, from *want* of resources in the execution of his plan, to *no more mistakes* then entomologists expose themselves to under more favourable circumstances from *neglecting* them.

But I am not satisfied with obtaining the simple grant of permission to describe on the spot a part of what he collects. I claim more for the entomologist abroad. I wish to show that he should naturally be expected, nay desired, to do so; for although he labours under distressing disadvantages in some respects, he happily enjoys a proportionate share of advantages in others. It is unsatisfactory in the extreme for an enthusiastic entomologist to be obliged to let his collections go out of his own hands,—see others reap the honors from them, which are to be reaped on such occasions,—or perhaps see as it were a gulf close over them, hear no more of them, and find himself forgotten. For what is a mere collector? Let him display as much industry as possible, he is hardly looked upon as an entomologist—certainly, as long as he is prevented from publishing anything, not as a scientific one. Now, if such a man merely desists from publishing the fruits of his researches from want of resources to assist him to go creditably through such a task,—if he suffers his collections to go out of his hands, because he is too true a lover of science not to see the credit in a great measure due to himself reaped rather by another than to hoard up his entomological treasures, a useless heap, eventually to be destroyed by moths and time—I say, that a man who acts upon principles like those, finds himself not seldom disheartened in the prosecution of his studies under difficulties such as I have set forth. If, however, as I have endeavoured to point out, these difficulties can be overcome to a very considerable extent, is anything more natural than that he should be the herald of his discoveries himself? Could anything be more unkind and ungenerous on the part of his scientific

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brethren at home, than to oppose and discourage him by their disapprobation?

I might enlarge on this subject, which has been a sore one with me for a long time, to a great extent, but I think this is sufficient to direct the reader into the train of my ideas and to enable him to follow it up.

I hasten therefore to conclude. As mentioned above, the Tropical entomologist has a proportionate share of advantages to balance what falls to his lot of the contrary; one of these advantages which he has over his brethren at home is, that he has an opportunity of seeing and studying alive what can at home only be examined in state differing more or less from that of life. Therefore, if he is *enabled* and *expected* to describe new species, it is moreover *highly desirable* for the sake of the promulgation of *sound* information, that he should do so, that he should avail himself of this, his principal advantage, and describe, fresh from nature, as many of his favourites and their habits as possible; and discouraging him in such an undertaking on any of the above grounds would be discouraging the progress of science in general.

1. Chlænius pulcher. *N.*

C. elongatus, subconvexus, subglabratus, æneo-viridis, elytris obscurioribus, limbo pedibusque flavis, subtus piceus. Long. corp. 6¾ lin.

Caput oblongum nitidissimum, ante oculos 2-impressum. Mentum dente fortiter excavato. Antennæ art.3°. quarto sesqui longiore. Thorax obcordatus basi angustatus quadratus, latitudine antica quarta parte longior, parce punctulatus, antice lateribus deflexus, postice dorsoque planus, basi 2-impressus. Elytra striata, ad strias, præcipue apicem versus, subtillssime pilosa, flavo-marginata. Pedes flavi, spinulis castaneis. Abdomen flavo-marginatum.

Specimen singulum m. in ripis Mahæ-Oyæ fluvii prope Negombo cepi.

Distinguished by its elongate shape. The head is of a bright green colour with the labrum and the mandibles of a deep, and the antennæ and palpi of a light brown, the latter being darkened towards the end. The thorax is of the same colour as the head, reflecting a copper hue from the back, its anterior angles are obtuse, the basal ones being righte

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elytra are of the same greenish copper colour but darker; they are impressed with longitudinal lines, which are bordered on each side by a row of minute hairs. They as well as the abdomen have yellowish margins.

2. Chlænius regulosus. *N.*

C. subconvexus, subglabratus, thorace occipiteque rugulosis cupreis, elytris nigro-viridibus, pedibus elytrorum limbo lunulisque apicalibus flavis, subtus piceus, abdomine apice margineque flavis. Long. corp. 6¼ lin.

Caput fronte 2-impressum subtilissime longitudinaliter rugulosum. Menti dens laciniis extus rotundatis. Thorax ovatus basi quadratus lateribus valde deflexus, postice obsolete 2-impressus, parce punctatus, subtiliter transversim rugulosus. Elytra striata, staiis apicem versus per paria coëunsibus, ad strias, pilosa, apice utrinque lunula flava signata. Pectus abdomenque picea, hoc, segmentis 2 ultimis, præcedento dimido margineque flavis.

Specimen unicum f. ubi præcedentem cepi.

The head finely longitudinal, the thorax transversely rugose; the latter with rounded and deflexed sides. The mandibles are of deep brown, the palpi and antennæ of yellowish colour darkened towards the tip. The lobes of the mentum tooth are externally rounded. The elytra are marked by two subapical spots of yellowish colour and semilunar shape (the back of the lunulæ being turned towards the suture). The striæ verge near the apex by twos into each other. The abdomen is distinguished by having a yellow margin and apex.

3. Scarites minor. *N.*

S. elongatus, niger, nitidus, subtus nigro piceus, pedibus piceis, tarsis, antennis palpisque castaneis. Long corp. 5 lin. lat. 1½ lin.

Caput subquadratum, ante oculos 2-impressum, pone oculos irregulariter sulcatulum. Mandibulæ validæ inter medium et basin fortiter dilatatæ, obtuse dentatæ, dextera dente obtuso subapicali, supra subtusque longitudinaliter sulcatæ. Antennæ art. 1° sequentium trium., 2° tertii prope longitudine. Thorax oblongo-quadratus, angulis anterioribus obtusis, posterioribus oblique truncatis. Elytra thoracis capitisque prope longitudine, striata, ante medium ad striam 2m uni-apicem versus ad striam 3m 2-punctata, punctis piliferis, basi granulata,

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angulis oblique-truncatis. Pedes anteriores tibiis apice extus 5 dentatis, dentibus 2 ultimis parvis, omnes tarsis subtus leviter excavatis.

In prov. occid. arenis humidis sub vegetab. putrescent. specimina nonnulla legi.

Scarce, but little distinguished excepting by its small size. The head is subquadrate, in front with two deep longitudinal impressions, behind the eyes finely sulcated. The labrum is of the usual shape, the eyes are not very prominent. The antennæ are of about the same length as the head; the first joint is about as long as the three following together; the second, which is generally longer than the third, is in this case of the same length, joints 1-4 are naked, 5-11 pilose, increasing towards the tip gradually in size and thickness, taking at the same time a subquadratic and depressed shape. The mandibles are strong, much dilated and dentated from before the middle to the base, the right one having additional subapical tooth. The maxillæ also are strong, but slightly bent at the apex, where they are also slightly excavated. The labial palpi have the last joint longer than third, elongated and elliptic. The thorax is oblong, with the basal angles obliquely truncated. The elytra are oval, striated, granulated at the base, and have, as has also the thorax, a narrow margin. The anterior tarsi are furnished externally with five teeth, the two last ones of which, however, are very small. The posterior legs are similarly provided, but the teeth are indistinct. The joints of the tarsi are slightly excavated below. The sides of the body below are rugose.

4. Clivina rugosifrons. *N.*

C ferruginea, capite, thorace abdomineque piceis. Long. corp. 4½ lin lat 1½ lin.

Caput rugosum, inter oculos elevatum, elevatione plana antice profund 1-impressa. Mentum lobis subtiliter sulcatis. Antennæ robustæ tho racis medium vix attingentes, art, ultimo elongato penultimo-, art. 2 tertio sesqui longiore. Thorax subquadratus antice parum angustatu elytrorum latitudine, subtus parce punctatus, prosterno sulcato, Elytr striata, in striis punctata. Pedes tibiis anterioribus apice axtus 4 dentati subtus excavatis, reliquis fortiter spinosis, tarsis articulis margine apica setoso.

In prov. occid. sub vegetab. putrescent. infrequentissime legi.

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A large and distinguished species. The head is very rugose, the clypeus is contracted behind the apical angles, and then produced again into another pair of angles. The labrum is transverse, slightly sinuated in front, with the angles rounded and setose. The mentum is quadrate, the lobes rounded at the apex and slightly sulcated, the tooth is strong, of equal length with lobes, and of the typical spear-headed form. The ligula has the apical angle much elongated, terminating in a membranaceous bristle which is bifurcate at the tip. The maxillary palpi have the last joint elongate, cylindrico-conic: that of the labial ones is still more elongate, elliptic. The antennæ have the basal joints elongate, those towards the tip rounded. They and the legs are hairy, otherwise the insect is of a bright polished surface.

5. CLIVINA ELONGATULA. *N.*

C. elongata, subdepressa, supra nigro-picea, subtus picea, pedibus elytrorumque margine castanies, antennis oreque dilutioribus. Long. corp. vix 3 lin. lat. ¾ lin.

Caput triangulare, subtiliter punctato-rugosum. Palpi articulo ultimo apice leviter truncato. Thorax oblonge quadratus, infra apicem leviter sinuosus, parce obsoleteque transversim strigosus. Elytra striata, in striis punctata, ad striam 3m utrinque 4 punctata. Subtus parce punctata.

Ebi ræcedentem frequenter legi.

I have not dissected the labium of this species, which, however, is at once recognised by its depressed and, in proportion to its width, very long shape. The labrum, antennæ, and legs, are so much like those of the former, that they need no further description.

6. CLIVINA MACULATA. *N.*

C. picea, elytris ferrugineis infra medium macula nigra obsolet ornatis, pedibus intermed. et post. oreque brunneo-testaceis, pedibus ant. antennisque obscurioribus. Long corp. 2 lin.

Caput oblonge quadratum, rugosum, costis 5 magis minusve interruptis ad marginem anteriorem in dentes 4 productis munitum. Palpi art. ultimo basi intus incrassatto. Antennæ art. 2-3 subæqualibus. Thorax subquadratus leviter rotundatus. Elytra striata in striis profunde punctata.

Ubi præcedentes specimen singulum legi.

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As distinguished as the preceding two species. The palpi and the mentum appear to me of a somewhat extraordinary form. The last joint of the former is considerably and more inflated at the base than in any other Ceylon species that has hitherto come under my notice, whilst the others are of a very curved appearance in both the maxillary and labial palpi. The insect is, however, easily distinguished by its general facies, which is rather like that of a *Dyschirius;* from which genus, however, the mentum alone is sufficient to separate it. I may as well remark here, that, although the Island is well supplied with *Scarites* and *Clivinas*, I have hitherto not discovered a single *Dyschirius*, a genus so well represented in Europe. Of the three *Clivinas*, just described, single specimens only have been in my possession for a considerable time. There are three or four more species met with about Colombo, but these being of common occurrence, I abstain from describing them here, as they may possibly be amongst those described by Putzeys or others from the Indian continent.

7. ŒDICHIRUS ALATUS. *N.*

Œ. alatus, setosus, nitidus, rufo-testaceus, thorace dilutiore, capite, elytris abdominisque segmentis 3 ultimis nigris; elytris apice 2 maculatis, maculis rufo-testaceis; pedibus flavis, femoribus apice tibiisque basi nigrescentibus; antennis palpisque maxill. basi obscuris, apice testaceis, reliquis oris partibus rufo-piceis. Long. corp. 3¼ lin.

Œ. pæderino Er. similimus, præter colorum distributionem differt tamen *alis*, elytrorum antennarumque articuli ultimi sculptura. Antennæ art. ultimo penultimo aequali nisi paulo minore, apice fortiter *truncato* leviterque excavato. Thorax Œ. pæderini, dorso punctis biseriatim impressus, serie interna vel centrali elliptica punctis minoribus magis inter se approximatis, externa vel submarginali punctis magnis distantibus. Elytra oblonge subquadrata, infra medium rotundata, thorace *longiora* et duplo fere amplior (utrumque elytrum thoracis fere magnitudine), basi parte thoracis adjacente *duplo-*, infra medium illius latitudine antica plus tertia parte latiora. Os, pedes et abdomen Œ. pœderini.

Pœderorum more victitare videtur; in eorum societate in lacus Colombensis ripis infrequentissime legi; illis minus gracilis atque minus agilis.

I have not had an opportunity of examining specimens of either of the three *Œdichiri* hitherto described. However, I

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have before me Erichson's figure and description of the Sicilian *Œ. pæderinus*, with which I find my species strongly to agree. It differs, however, from the former materially in the following three points, viz., the wings, the sculpture of the wing-covers, and the last antennal joint. The fact that this species has wings, would render an alteration in Erichson's diagnosis of the genus necessary, it being characterized therein as "apterous". The elytra are not so much contracted and rounded at the base, and, being longer than the thorax, have therefore a more oblong, subquadratic appearance. As in the above typical species, they are, however, rounded at the sides and broadset a little below the middle. They are about twice as broad at the base as the adjoining part of the thorax; and in their broadest part rather more than a third broader than the thorax in its. The third point, in which the two species differ, is the last joint of the antennæ, which, in this case, is strongly truncated at the tip and slightly excavated. They are further distinguished by the distribution of the colours, my species being of a dark yellowish red, thorax lighter, head, elytra and three last abdominal segments black, elytra with two reddish spots at the apex, legs yellowish, at the apex of the femora and base of the tibiæ blackish, the mouth is brown, the maxill. palpi yellowish with the three first joints dark at the base, the antennæ have the six basal joints dark excepting at the apex, where they, as well as the five remaining ones, are yellowish. In all other points I find the insect to agree entirely with the typical *Œ. pæderinus*: the palpi, legs, and anal segment of abdomen are of the same structure, the hairy vestiture is exactly the same in the different parts of the body of my species as it is in the corresponding ones of Erichson's.

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No. II.

I. ANCHISTA, *n. g.* *N.*

Fam. CARABIDÆ.

Trib. LEBIIDÆ.

Corpus depressum, ovatum. Caput magnum, oculis mediocribus, semiglobosis, prominulis. Mentum dente magno obtuso, lobis parum breviore, his extus rotundatis, apice acuminatis. Palpi robusti, maxillares art. ultimo magno ovato, apice obtuso, labiales art. ultimo valde securiformi. Ligula cornea apice obtuse acuminata, labrri marginem anteriorem attingens. (Paraglossæ mihi adhuc non dissectæ.) Labrum transversim quadratum. Mandibulæ simplices apice arcuatæ et ocuminatæ. Antennæ robustæ thoracis basin attingentes, art. 1° mediocri, 2° brevi, 3° quarto paulo longiore, 4-10 subæqualibus, 11° penultimo parum longiore. Thorax longitudine latior, angulis anticis rotundatis, medio obsolete angulatus, basi angustatus, quadratus. Elytra apice quadrate truncata. Pedes robusti tarsis art. 4° profunde bilobo, unguibus fortiter pectinatis

8. ANCHISTA MODESTA. *N.*

A brunneo-testacea, elytris, (maculis 2 obsoletis subhumeralibus exceptis) obscurioribus, oculis nigris, abdomine piceo. Long corp 4 lin.

Caput fronte medio leviter uniimpressa, Thorax profunde longitudinaliter canaliculatus, lateribus fortiter depressus. Elytra in regione media depressa apicem versus parum dilatata, striato-punctata, ad striam 2m punctis 2 majoribus subapicalibus, cum thorace marginata.

Specimen singulum m. prope Colombo nocte ad lumen cepi.

The characteristics of this new genus are those of the g. *Calleida*, excepting the ligula which in this case is obtusely acuminated, the last joint of the maxill. palpi which is obtuse at the apex, and the thorax, which is not as in *Calleida* longer than broad, but the reverse. From *Cymindis* it would differ principally in the deeply bilobed fourth tarsal joint, and in some other minor points, but it is difficult to say what the true characteristics of this genus are, if even Lacordaire uses the particle "ou" not less than five times in the diagnosis he gives of it in his g. d. Col. It would also appear to be allied to *Plochionus*, differing from this g., however, in the obtuse extremity of the terminal joint of the maxill. palpi, and the deeply bilobed fourth tarsal joint. However, if Lacordaire's diagnoses are exact, I feel justified in separating *Anchista* from all these genera. The name "*Anchista*",

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has reference to the affinity of the insect to the two genera just mentioned, whilst the specific name "*modesta*," refers to its inconspicuous colours. Amongst its peculiarities weight ought to be laid upon the plumpness of the palpi, in fact all other parts of the mouth and even the whole head, which was very striking to me.

Like many of my best *Carabidæ* I found this insect at night on the table, whither it had been attracted by the light. The anterior tarsi are dilated and furnished with hairy brushes below, longest at the apex of the lobes of the fourth joint.

II. ELLIOTIA. *n. g.* *N.*

Fam. CARABIDÆ.

Trib. LEBIIDÆ.

Corpus subconvexum, ovatum. Caput mediocre, oculis maximis. Mentum leviter transversim emarginatum, edentatum, lobis acuminatis. Ligula submembranacea apice truncata, paraglossis connatis marginem anteriorem parum superantibus, obtusis. Palpi elongati, art. ultimo elliptico, acuminato. Labrum magnum transversum, integrum, mandibulas fere obtegens. Mandibulæ validæ, edentatæ. Antennæ robustæ filiformes, humeros superantes, art. 1° mediocri, 2° brevi, 3° quinti popre longitudine, 4° prœcedente breviore, 2-4 obconicis, 5-10 æqualibus, cylindricis, 11° præcedente tertiâ parte longiore, 4-11 pilosis. Thorax parvus, capite minor, transversus, longitudine duplo latior; antice leviter emarginatus, lateribus elevato-marginatus, ante medium, lateribus rotundatus, medio fortiter angulatus, infra medium valde abrupteque angustatus, basi truncatus, subtus cylindricus. Scutellum leviter excavatum. Elytra ovata, marginata, apice sat fortiter truncata. Pedes omnes subæquales, simplices, tenues, tarsis cplindricis art. 3-4 magis minusve trigonis, unguibus simplicibus. Prosternum carinatum.

In honorem Dom. Hon. Walteri Ellioti (Maderaspatani), naturalistæ diligentissimi, meritissimi, nomen imposui.

9. ELLIOTIA PALLIPES. *N.*

E supra nigra, nitida, thorace scutelloque rufo-testaceis, labro elytrorumque limbo atque sutura brunneo-testaceis; subtus piceus, pectore rufo-testaceo, pedibus albidis, his geniculis oreque (palpis obscurioribus exceptis) testaceis. Long. corp. 2¼ lin.

Caput ad antennarum insertionem et inter oculos utrinque profunde impressum. Thorax basi rugosus, ante medium utrinque uni-impressus, linea media longitudinali divisus. Elytra punctato-striata, infra humeros leviter impressa.

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In ripis lacus Colombensis sub veget. putrescent. mens. Jul. non infrequenter legi. Agilis est et avolare semper expeditus.

A pretty and very interesting little insect, about whose systematic position I am not quite satisfied; however, I provisionally place it towards the end of the true *Lebiidæ*. I find it most to agree with the descriptions of the g. *Pentagonica S. G.* and *Rhombodera R.*, with neither of which, however, it is identical. The head is distinguished by the large and prominent eyes, and four deep impressions, two larger ones at the root of the antennæ, two smaller ones between the eyes, also by a very distinct neck which connects it with the thorax; the labrum is large, transverse and entire, with the angles rounded off and the base narrowed; the mentum is but slightly transversely emarginated, edentate; the ligula is truncated at the tip, the paraglossæ adhere to it, reach a little beyond it, and are obtuse at the apex; the palpi are rather long with the last joint elliptic, acuminate; the antennæ are strong, filiform, and reach beyond the shoulders, joints 5-10 are of equal length and cylindric, 4-11 are pilose. The most remarkable part of the insect is, however, the thorax, which is of a subrhomboidal shape, transverse, smaller than the head, as broad again as long; it has two strong lateral angles at the middle, each furnished with a strong bristle, the anterior part has the sides rounded, the posterior abruptly obliquely contracted, at the base it is cylindric. As a specific distinction of the thorax, I mention, moreover, that in the present species it is impressed with two deep punctures before the middle and that it is rugose at the case. The abdomen is slightly peduncled. The scutellum is slightly excavated. The elytra are oval, rather convex and impressed with rows of punctures. The legs are simple and weak, apparently equal in both sexes. The anterior tarsi are little stouter than the rest, but not dilated nor furnished with any additional clothing below; the anterior tibiæ are deeply notched. As to the colour: the head and wing covers are black, the latter with the suture and margin of a light brown and highly polished, the thorax is reddish, and the legs are whitish. The insect

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is very agile, and ever ready to take to its wings. It is of quite a peculiar appearance, imparted to it by its large eyes, small curiously shaped thorax and rather plump elytra and abdomen. I may further mention, that I have observed the fourth joint of the maxillary palpi to collapse when the specimens become quite dry, so as to give them a different, spoon-like appearance, apt to mislead any one who has not examined fresh specimens.

10. TRICHOPTERYX CURSITANS. *N.*

T. ovata, subconvexa, pubescens, supra obscure ænea, elytris æneo-brunneis, subtus picea, pedibus oreque testaceis, antennis art. 3-11 nigrescentibus. Long. corp. 2/5 lin.

Antennarum clava art 2 primis ovatis, ultimo conico, acuminato. Thorax amplissimus, elytris tertiâ parte minor, convexus, angulis acutis, basi humeros amplectens, apice angustatus. Elytra subdepressa, sub-quadrata, apicem versus parum angustata, truncata, abdomine multo breviora Tibiæ medie incrassatæ. Coxæ posticæ maxime dilatatæ. Mesosternum carinatum.

Sub veget. putrescent. exsiccescentibus in prov. occid. copiosa.

A rather large species, commonly met with in this part of the Island, under rotting vegetable substances somewhat dried up. It is very agile and ready to take to its wings, which are of the beautiful typical construction, about twice the length of the body, and in dead specimens frequently produced behind. These insects vary a little as to shape, some being more narrowed behind than others, and also as to the exact number of the abdominal segments left uncovered by the elytra, generally three or four. The head is large, but exhibits nothing abnormal or extraordinary; the thorax is very large, emarginated in front and behind, with the angles acute, the basal ones enveloping the shoulders; the wing-covers are subquadratic, with the angles rounded off and a little narrowed behind; the legs have the tibiæ incrassated in the middle, and the posterior coxæ very much dilated and distant from each other; in all other respects they are typical. The shape of the body is that of an egg, broadest at the shoulders, gently narrowed towards the apex of the abdomen, and rounded off towards the head.

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11. TRICHOPTERYX IMMATURA. *N.*

T. præcedenti similis, differt tamen colore supra æneo-testacea, subtus testacea, antennarum ast. 3-11 nigrescentibus; differt etiam corpore robustiore, magis quadrato, capite paulo majore, thorace minus convexo, parum ampliore, elytris abdomen totum vel fere totum obtegent. Pedes, antennæ etc. omnino præcedentis. Long. corp. ⅕ lin.

In præcedentis societate specimina nonnulla legi.

Of somewhat the appearance of an immature individual of the former, but sufficiently distinct to be formed into a new species. The insect is altogether of a different appearance, imparted to it by the greater general plumpness of the body, the larger head, the less convex, but at the same time possibly still ampler, thorax, the altogether more quadratic shape, etc. The remark regarding the exact number of abdominal segments, left uncovered by the elytra, applies to this and all other species as well. The present one has generally the last two segments uncovered.

12. TRICHOPTERYX INVISIBILIS. *N.*

T. ovata, subdepressa, subparallela, pilosa, supra obscure ænea, subtus picea, pedibus, abdomine, antennis oreque testaceis. Long. corp. vix 1/5 lin.

Thorax amplus, elytris sesqui minor, convexus, angulis posticis humeros vix superantibus. Elytra oblonge quadrata, angulis rotundatis, subdepressa, truncata, abdomen totum vel fere totum obtegentia. Coxæ posticæ approximatæ. Tarsi typicis minus elongati, art 3° præcedentibus haud multo longiore.

Cum *T. cursitante* victitat; frequenter legi.

A very pretty and very distinguished species. Its most striking peculiarity consists in the posterior coxæ, which are little distant from each other as those of the anterior legs, and almost touch each other, and also in the shortness of the tarsi. The head with the antennæ, the mesosternum, the tibiæ, which are incrassated in the middle, the posterior coxæ, with regard to the enlargement, are quite typical. However, the thorax and elytra differ again from those of *T. cursitans*, (which in every respect may be looked upon as the typical representative of the family in Ceylon, and which is here referred to as such) the former by the shortness of the posterior

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angles, which can hardly be said to envelope the shoulders, the elytra, by being less or not at all narrowed behind, giving an oblong rather than an oval shape to the insect. Although in length only about one-half shorter, it is in bulk certainly one-fourth smaller than *T. cursitans*, and, although probably the smallest Ceylon beetle, it is distinguished at first sight.

13. Ptilium subquadratum. *N.*

P. subquadratum, subconvexum, pilosum, obscure æneo-test aceum, thorace dilutiore. Long. corp. ¼ lin.

Caput mediocre. Antennarum clava art. 1° inverte conico, 2° sub-cylindrico, ultimo elongato-ovato. Thorax convexus, angulis basalibus humeros fortissime amplectentibus, apicem versus valde rotundatus, apice leviter sinuatus. Elytra quadrata, abdomen non totum obtegentia. Scutellum parvum. Pedes robusti tibiis apicem versus incrassatis, tarsis art. 3° primi secundique longitudine, his subbilobis subtus penicillatis, coxis posticis simplicibus distantibus. Mesosternum non carinatum.

Ubi præcedentes sed infrequenter occurrit

The g *Ptilium* is the repository for all the anomalies of the family, its characteristics therefore are very vague; but if the absence of the mesosternal carina and the simplicity of the posterior coxæ are the determining features amongst them, the present species, in spite of a variety of anomalies it exhibits in other respects, belongs to it. The head is of middling size; the antennæ robust with the first joint of the club of the shape of an inverted cone, the second rather cylindrical, narrowed at the base, and the last elongate, ovate. The thorax is of very different structure from that of the foregoing species of the family, the basal angles being unusually far produced beyond the shoulders; towards the head it is strongly and rapidly rounded off, being thus altogether of a semi-circular shape; at the apex it is merely slightly sinuated, and the head is inserted rather below than in this sinuosity; the whole thorax moreover is very convex, whilst the elytra are depressed. The wings vary from the typical form by being fringed with short simple cilia, instead of those long feathery appendages; they are moreover without a distinct peduncle, but still folded in the manner characteristic of the family. The legs are stout

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with the tibiæ thickest at the tip; the third tarsal joint is of the length of the preceding two; the latter are somewhat bilobed and hairy below. The posterior coxæ are simple and distant. The mesosternum without a carina. The whole shape of the insect is quadratic rather than otherwise.

14. PTENIDIUM MACROCEPHALUM. *N.*

P. ellipticum, subconvexum, nitidum, sparsim pilosum, supra piceo-æneum, subtus piceum pebibus oreque testaceis. Long. corp. ¼ lin.

Caput maximum Antennarum clava elongata articulis ellipticis. Thorax subquadratus antice posticeque angustatus, basi punctis 4 magnis profunde impressus. Elytra ovata, medium versus leviter inflata, apice obtuse acuminata, abdomine longiora et ampliora, punctulis lineis dispositis obsoletissimis impressa. Alæ corpore plus duplo longiores. Tibiæ fortiores spinulosæ. Tarsi breviores. Prosternum carinatum.

In præcedentium societate frequenter lectum.

This is perhaps the prettiest of the five species of the family just described, and at first sight recognised by the shape of its body and the polished back. The head is very large. The thorax is narrowed in front and behind, at the latter place impressed with four deep not to be overlooked punctures. The wing-covers are oval, a little inflated about the middle, rounded at the apex, and longer and wider than the abdomen. The prosternum is carinated.

It affords me much gratification to be enabled to publish representatives of three genera of this highly interesting and probably very extensive and widely-distributed family of pygmies, the South Asiatic representatives of which have hitherto been entirely unknown. I have no doubt that even this Island is the abode of a great many more species.

15. STENUS BARBATUS. *N.*

S. elongatus, æneo-niger, nitidus, punctatus, sparsim pubescens, pedibus palpisque albidis, ore coxisque testaceis, antennis brunnescentibus. Long. corp. 2¼ lin.

Caput thorace tertiâ parte latius, fronte costis 3 abbreviatis, antice bido-pubescens. Antennæ art. 3° sequentium 2 fere longitudine, 3 imis elongatis, ellipticis. Palpi max. elongati apice densius pubes-ıtes. Thorax cylindricus medeo leviter incrassatus, basi subquadratus.

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Elytra thorace paulo longiora, sed fere duplo latiora, convexa. ovata. Abdomen immarginatum. Pedes elongati tenues, tibiis apice tarsisque fortiter setosis, his art. 4° profunde bilobo.

In lacus Colomb. ripis specimina nonulla legi.

This as well as the following species belongs to Erichson's division II. B. of the g., both having the abdomen immarginate and the fourth tarsal joint bilobed. Everything about this species is elongated. The head is about one-third broader than the thorax, the forehead is slightly excavated with two elevated ridges running from the root of the antennæ a short distance upwards, a third runs from the crown of the head down towards the centre of the two former, but all three reach only about the middle of the head. The part below the antennæ is covered with white hair. The antennæ have the third joint much elongated and the terminal club composed of elliptic joints. The thorax is rather slender, incrassated at the middle, gradually narrowed in front but nearly quadratic behind. The elytra are longer than the thorax, about double its breadth and oval, being slightly narrowed at the shoulders and the apex. The legs are long and slender, hairy at the apex of the tibiæ and the tarsi, the latter very much so on the inner side. The insect is of a metallic black color, highly polished; the legs, palpi and the first two antennal joints are whitish, the tibiæ and the apex of the palpi being, however rather darker, joints 3-11 of the antennæ are brownish, the coxæ and the mouth are yellowish, the tarsi have a brown spot at the apex of the first three joints, the claws are black. The insect is punctured all over, but the abdomen, the apical segments of which are indeed nearly smooth, less so than the rest of the body, and sparingly covered with small white hairs.

16. Stenus lacertoides. *N.*

S. robustus, nigro-æneus, dense profundeque punctatus, subtus sparsissime pubescens, pedibus palpisque testaceis femoribus apice nigrescentibus, antennis oreque castaneis. Long corp 1½ lin.

Caput thorace quartâ parte latius, fronte 2.costata. Antennæ robustæ art. 3° quarto paulo longiore, 9.10 globosis, 11° conico. Thorax cylindricus, medio fortius incrassatus, latitudine quartâ parte longior, margine

anteriore elevato, basi subquadratus. Elytra thorace longiora, convexa, humeris prominentibus. Abdomen immarginatum. Tarsi art. 4º profunde bilobo.

In prov. occid. stagnorum ripis rarius occurrit.

About this species everything is robust. It is well distinguished by the rounded club-joints of the antennæ, the elevated anterior margin of the thorax, the prominent shoulders, and its general shortness and plumpness. The forehead is rather more depressed or excavated than in the former, the two antennal ridges are shorter, the vertical one is altogether obsolete. The palpi are robust. The third antennal joint is about one third longer than the fourth. The thorax is shorter and plumper than in the former. The elytra are less oval, having the shoulders more prominent and only the apex rounded off or narrowed. The legs are similar to those of the former, but more robust, less hairy, and have the tarsi more cylindric. The insect is of a blackish metal color, the legs and palpi are yellowish, the tibiæ, however, the apex of the palpi, and also joints 1-2 of the antennæ rather darker; the femora are blackish towards the end, the mouth and joints 3-11 of the antennæ are chesnut, and the coxæ pitch-color. The animal is densely and deeply punctured all over, very sparingly covered with small greyish hairs, nearly obsolete on the back but more distinct below. It is less highly polished than the former.

17. Anthicus quisquiliarius.* *N.*

A. castaneus, capite, abdomine elytrisque piceis, his fascia media transversali interrupta maculisque 6 humeralibus niveis, parce pilosus. Long. corp. 1¾ lin.

Caput globosum, supra subtusque profundo punctatum, oculis parvis. Thorax nodoso-pyriformis, infra medium constrictus, parte anteriore crassiore lin. long. med. profunde divisa, subcordiformi. Elytra elliptica.

Sub veget. putrescent. victitat, prope Colombo rarius legi.

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* *A formicarius*, of the first edition. I have changed the name, as I have since perceived that it has been already used by Laferté.

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This insect looks uncommonly like an ant. It is easily distinguished from all other species of the Island, partly by this resemblance, partly by the sculpture of the thorax and the white fascia across the elytra. The antennæ are robust, thickened towards the tip, the three last joints forming a club. The legs have the femora very much incrassated, the tibiæ at the apex bicalcarate, and the tarsi, especially of the anterior pair, very hairy below, the fourth joint appears to be slightly cordiform. The white marks of the shoulders and the fascia across the wing-covers are composed of white hairs, the former are rather an interrupted row of these than true maculæ, the fascia consists of two halves, one in either elytron, reaching neither the external margin nor the suture. The insect is of slow motion.

18. Anthicus insulanus. *N.*

A. testaceus, abdomine obscuriore, capite thoraceque rufo-testaceis, elytris fasciis 2 nigris, parce pilosus. Long. corp. 1¼-1½ lin.

Caput globosum oculis mediocribus. Thorax pyriformis, cum capite supra punctata. Elytra ovata. Tarsi art. 4° bilobo

Prope Negombo in pratis sat copiosus.

In some of the specimens before me the anterior femora are furnished with a strong thorn inside, having at the same time the tibiæ of the same pair of legs slightly emarginated inside near the apex.

19. Meligethes Orientalis. *N.*

M. ovatus, subconvexus, pilosus, supra nigro-æneus, subtus piceus, pedibus, antennis palpisque maxill. dilutrioribus, tarsis palpisque labial. brunneo-aureis. Long. corp, 1-1¼ lin.

Mentum transversum planum, punctatum, lobis apice depressis excavatis, glabris obtusis. Palpi lab. art. ultimo inflato, ovato ; maxill art. ultimo apice angustato levissime truncato Mandibulæ uni dentatæ. Thorax amplus angulis acutis, antice emarginatus, postice pluries sinuatus, subtus punctatus. Elytra ovato-quadrata, angulis 4 apicalibus rotundatis, pygidium haud obtegentia. Pedes validi, femoribus tibiisque incrassatis ; anteriores tibiis apice intus unispinosis, tarsis art. 1-3 fortiter dilatatis, 1.2 subæqualibus transversis, profunde reniformibus, 3° minore, cordato, 4° minimo, subcylindrico ; intermed. et post

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tibiis extus spinulosis, tarsis anterioribus similibus sed art. 1-3 minus dilatatis, cordiformibus. Prosternum marginatum, punctatum, obtuse, acuminatum. Mesosternum antice carinatum.

Variat magnitudine et colore æneo-brunnea.

Prope Colombo in floribus per occasionem frequentissime legi.

Of the usual shape and color, but larger than usual,—varying, however, in this respect, some individuals being fully one-third smaller than others. Those small individuals, which occur in the proportion of about 2 to 20, are, moreover, nearly always of a brownish metal color instead of a blackish green. I have been unable to discover any other distinctions. This difference in size is no criterion as to the sex. The insect appears of local occurrence or attached to certain plants, which is nearly the same. I find them in abundance in the blossoms of *Convolvulaceous* and *Apocynaceous* plants in my garden, which is situated on the west bank of the lake. The species appears to differ from the typical *Meligethes* in the following points: the structure of the mentum, which I have sufficiently described above, the last joint of the lab. palpi, which in this case is not truncated, and the first of the antennæ, which is externally incrassated as in *Epuræa.* The antennæ are otherwise robust, the club is firm and hairy. The thorax is very ample, thinly ciliated along the upper part of the anterior margin, rather strongly below. The prosternum is largely developed, marginated, punctured and obtusely acuminated, overlapping the anterior part of the mesosternum which (the anterior part) is cylindric and carinated. Joints 1-3 of the tarsi are strongly penicillated below, the penicilla being composed of glanduliferous hairs of a fine golden color.

20. Georyssus gemma. *N.*

G. pygmæi staturâ et magnitudine, supra purpureo æneus, iridescens, subtus piceus; *alatus.* Thorax subsemiorbicularis infra apicem constrictus, sulco med. long. divisus, lateribus, basi apiceque excavatus, impressionibus 3 majoribus dorsalibus, 2 minoribus lateralibus. Elytra fortissime costata, costis obtuse dentatis, in interstitiis transversim punctato-impressa, ad humeros profunde excavata, infra medium leviter sinuata. Tibiæ extus spinulosæ, intus sparsim ciliatæ.

Prope Negombo in ripis Mahæ-Oyæ fluvii non infrequenter et per occasionem nocti ad lumen cepi

Lacordaire and others characterize the g. *Georyssus* as having the elytra soldered together and being destitute of wings. *In the present species, however, the elytra are unconnected and cover wings proportionately larger than in any other beetle I can at present think of.* They are elongated and comparatively narrow, resembling in shape very much those of a *Libellula*, have a few veins at the base, and are ciliated at the margin. I have moreover occasionally taken this insect *flying* about the light at night. The sculpture of the thorax is complicated and difficult to describe. However, the leading features in it are these: a subapical sinuosity on either side; a longitudinal furrow; excavated sides, base and apex; three larger dorsal depressions (one central, two obliquely basal) and two smaller lateral ones at the subapical sinuosities—a short elevated ridge at the centre of the base separating the two basal impressions and being itself divided by the longitudinal furrow; two elevations separating the anterior part of the basal impressions from that of the central one (at the middle these three depressions are connected); two small rugosities near the anterior margin, one on either side of the longitudinal furrow.

The sculpture of the elytra is less complicated. They have a deep cavity at the shoulder, a large but not deep sinuosity below the middle, and are obtusely acuminated. The costæ of the back are 11 in number, the suture lying in the central one. The half of this central costa and the exterior margin form an elevated border round either elytron. The first and second on either side run towards the apex, but come to a stop (very abrupt in most, but less so in some specimens) before reaching it; the third, after having been interrupted near its base by the subhumeral cavity, runs on but does not reach as far as the former; the fourth does not leave the region of the shoulder; the last on either side is very prominent at the base, but soon forms an abrupt declivity and runs on as a low ridge to below the middle. The back of all these costæ is obtusely dentated. The interstices are marked with large, shallow,

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transverse impressions. The head of the insect is rather large and even. The mandibles are furnished with an obtuse subapical tooth, the two lower thirds are ciliated. The maxillæ have the apex of the outer lobe externally enlarged, rounded off, and furnished with three strong teeth replaced by cilia on the inside; the inner lobe is conic and similarly provided with teeth and cilia, however, much thinner and finer. The maxill. palpi are robust, the last joint is inflated at the base. The antennal club is hairy, dark (whilst the remaining joints are yellowish), conic, and somewhat securiform, the sixth joint being inserted on one side of the seventh. The legs are robust, the tibiæ slightly curved, obliquely truncated at the end, furnished with spines along the outside, and with distant cilia along the inner.

21. HYDROCHUS LACUSTRIS. *N.*

H. elongatus, subdepressus, supra metallicus, iridescens, subtus piceus, pedibus, antennis, palpis elytrorumque margine magis minusve brunneis, mento cyaneo. Long. corp. 1-1½ lin.

Palpi maxill. robusti art. ultimo elliptico leviter inflate. Mandibulæ apice bifidæ. Antennarum clava dense pilosa. Thorax oblonge quadratus basin versus angustatus, basi medio productus, cum capite profunde punctata Elytra ad humeros oblique truncata, apicem versus sat fortiter angustata, profunde striato punctata. Tibiæ extus spinulosæ,

Specimina nonnulla in locu Colomb. legi.

The head is robust, broader than the thorax, the eyes large and prominent. The femora, the last joint of the maxill. palpi, the mandibles, and the tarsal joints are dark towards the apex

22. HYDROUS RUFIVENTRIS. *N.*

H. ovatus, convexus, supra oleagino-niger, subtus obscure ferrugineus, pedibus dilute piceis, labro æneo, reliquis oris partibus cum clypeo testaceis. Long. corp. 9 lin.

Palpi maxill. articulis apicem versus abruptius incrassatis, art 3° quarto sesqui longiore. Antennæ art. 7-8 fortiter perfoliatis, ultimo acuminato. Caput antice utrinque punctulorum serie subsemicirculari et ad oculorum marginem interiorem impressum. Thorax punctulorum seriebus 4 lateralibus, 2 subapicalibus obliquis abbreviatis signatus. Elytra subtiliter striato-punctata. Tarsi omnes unguibus basi fortiter uni-dentatis. Carina prosternalis cultriformis.

Specimen singulum f. nocte ad lumen cepi.

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As far as my resources allow me to ascertain, a very anomalous species, having the perfoliated antennæ and toothed claws of a *Hydrophilus* and the cultriform prosternal carina and the elytra of a *Hydrous*. I have placed it in the latter g. on account of the sharp edge of the prosternal carina, in which the great distinguishing character of this g. seems to lie, the same being deeply grooved in *Hydrophilus*. The insect attracts attention at once by the reddish color of its abdomen. It is of a blackish olive color on the back, having, however, the clypeus and the anterior margin of the labrum of a yellowish brown, the latter being otherwise of rather a metallic color. The remaining parts of the mouth are more or less yellowish. Joints 1-6 of the antennæ are yellowish too, with the exception of the second which is dark: joints 7-9 are blackish and pubescent. The legs are of a light pitch color. The lower part of the head is impressed with two rather semicircular series of punctures, similar punctures occurring along the internal margin of the eyes. The thorax is marked with six series of them and on the elytra they are arranged in lines. The sternal carina is well developed, the prosternal part has a sharp edge, whilst the mesosternal one is obtuse on the back, and the metasternal part depressed and slightly grooved.

23. Hydrous inconspicuus. *N.*

H. præcedente minus convexus, supra oleagino-niger, subtus rufo-piceus, ore testaceo. Long. corp. 4½ lin.

Palpi maxill. art. 2° et 4° subcylindricis, 3° apicem versus sensim incrassato, sequente tertiâ parte longiore. Antennæ art. 7-8 sub-globosis, 9° magno, ovato. Caput, thorax et elytra, ut in præcedente sculpta et signata.

In lacu Colomb. mens. Jun. non infrequenter cepi.

This is in every respect a normal species. The prosternal carina has a sharp edge, the claws are simple, the antennal club is composed of rounded joints, the elytra are of the typical structure, &c. In the latter respect as well as with regard to the various series of punctures upon head, thorax and elytra, it resembles the former; the punctures of the elytra are, however, less distinct. Joints 1-6 of the antennæ are yellowish,

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the club being dark and finely pubescent. The maxill. palpi have joints 2 and 4 subcylindric, but the intermediate one thickened towards the tip.

I have not seldom in the month of June taken the pupæ of this species on the banks of the Colombo lake and hatched them at home. I found them about one inch under ground and often as far as 12 feet from the edge of the water, but still in muddy places. The imago is very active, perhaps more so than any other species of the g.

No. III.

General Remarks on the SCYDMÆNI.

In the first number of these Papers, I have described a winged species of *Œdichirus*, a g. supposed to be without organs of flight; in the second number I have given publicity to the more important discovery of wings in the single g. which forms the family of the *Georyssi*, also hitherto supposed to be apterous.

At present I am about to announce to some and to confirm to others the existence of these organs in the family of the *Scydmænidæ*, a fact, although incomplete, of more importance than either of the former, considering the extent of the family and the difference of opinion, which appears to exist on the subject amongst the most eminent Entomological authorities. It is this importance which induces me to enter more fully on the subject.

I am not acquainted with the famous monograph of the family of the *Scydmænidæ* by Dr. Schaum. From the manner, however, in which it is quoted by Lacordaire, in his g. *d. Col.* I should infer that these two celebrated authors agree in all the vital points. In Lacordaire's diagnosis of the family, these insects are described as having (with the exception of the American g. *Brathinus*, of which Lacordaire is not quite sure that it belongs to the family) the elytra soldered together, and being destitute of wings. Now, it is scarcely credible

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that on a point so easily ascertained as this, any difference of opinion should exist; still, Westwood, in his "Modern Classification of Insects," in describing the same family, makes statements which imply the contrary. However, Lacordaire's description, being by 15 years,—more in fact,—the most recent, is, from this reason alone, entitled to be considered before all others; and, looking upon it in this light, that is, as the essence of all former observations, I shall, for the present, occupy myself with it alone.

According to this description, as mentioned above, the insects which it regards *have the elytra soldered together, and are destitute of wings.* This being the case, I was startled to find that, out of the thirteen species described below, nine or ten which I examined in this respect, had neither the elytra soldered, nor were they destitute of wings—*on the contrary the elytra were unconnected in the middle, and the wings were nearly double the size of the whole insect and could not possibly be overlooked.* I would willingly suppose that the 100 species of this family contained in European collections, and principally derived from Europe and North America, agreed with Lacordaire's description, and that the Ceylon species were exceptions to the general rule, had not Westwood's observation, alluded to above, corroborated my own, thus rendering me suspicious of some unaccountable mistake or oversight somewhere or other. That this mistake cannot consist in a slip of the pen, or a misprint in the g. *des Coléoptères* quoted above, is clear from the obvious care which has in every respect been bestowed upon this work, and from the same remarks being repeated in different words.

Where then this mistake is,—upon what ground it rests—it would, under my circumstances, be useless to attempt to unravel. However, it appears certain to me that some more detailed and positive remarks on the subject cannot be superfluous, and must be new to some entomologists.

Placing the fullest confidence, as every one would do without hesitation, in the infallibility of the description of the Belgian author, it was not likely that I should have looked for wings

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at all in the *Scydmænidæ* (a family to which I have not, until lately, paid much attention) had I not been struck by seeing the elytra of my *S. alatus* open, when handling it with a fine painter's brush in a drop of water, it being at the time quite out of the question that the opening could have been effected by pressure. On opening the elytra fully, I had no difficulty in discovering the wings.

Rendered extremely curious by this discovery—diametrically opposed to the distinct statement of so great an authority as the one just alluded to—I now examined other species, and all with the same result, most of them opening the elytra without my assistance, in the same manner as *S. alatus*; and I have not the slightest doubt that, when a sufficient number of specimens will enable me to examine the rest, it will still be with the same result.

That these insects use their organs of flight may be gathered from the following. At a former period, I lived in a house situated on a small eminence and overlooking extensive groves of cocoanut trees, cinnamon gardens, paddy fields, and patches of jungle. Here I collected large numbers of *Pselaphidæ*, especially *Euplectus*, in thin, scarcely visible, spider webs, with which the white walls of the house were covered in certain places—thus forming one large trap for anything small flying about. That these had been caught here when on the wing there can be no doubt; but I was much surprised to find with them (what is so common in more congenial localities, here also,) a considerable number of *Scydmæni*, especially my *S. advolans* and *pubescens*, as they were said by the most recent authority to be unable to fly, and the position they then found themselves in, was one they could not well, or would not possibly, have got into otherwise than by flying. From some reason or other, I am ashamed to say, I did not follow up the matter at the time; but I am now certain on the subject. Indeed, to remove all doubt and to settle all disputes, I have just been so fortunate as to take my *S. advolans* actually on the wing, flying in my garden in the evening at sunset.

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Having gone so far, I will (in spite of some slight misgivings of being laughed at for telling an old story with so grave a face) add a few descriptive words about the organs in question. The wings of my *Scydmæni* are ample, about double the size of the whole insect, oblong, having the margin beautifully ciliated, and, with the exception of a few yellowish veins at the base, without any visible organs of this kind.

In spite of the difference in their shape, etc., I believe the species described below to be all genuine *Scydmæni* as restricted at present. Being, however, unacquainted with the sexual distinctions of these insects (which indeed I believe not to have been satisfactorily pointed out by any one, and to differ in different species), I should not be surprised if one or two of my species were eventually ascertained to have been separated upon these grounds alone. However, having been very reluctant in the admission of new species, it is just as likely that individuals may hereafter be found united in one which ought to be separated into two species. But I trust that neither may happen.

The species were all collected by myself in the immediate neighbourhood of Colombo. I have, however, no doubt that they occur all over the S. W. of the Island, which is of a uniform physical character, and perhaps occupy a still larger portion of it. Indeed, I have taken the *S. pselaphoides* in the hills, at an elevation of 3,500 feet, under the bark of trees. None of them are quite common; on the contrary, of nearly half of them I possess only one or two specimens. My *S. femoralis* I found under the soft, rotting bark of an *Erythrina Indica*: *S. Ceylanicus* and *ovatus*, I found dead in spiderwebs: *S. graminicola*, *glanduliferus* and *pyriformis*, I have hitherto exclusively taken in the sweeping net on the lawns of my garden about sunset: the other species I have met with indiscriminately in spiderwebs, under rotting vegetable substances, and in the grass.

After this preamble, which I trust may not be deemed quite superfluous, I now enter upon the description of my species, drawing previously attention to the *three* very natural and

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very distinct groups which they form, and the characteristics of which will at once be perceptible from the headings given below.

With regard to the first group (A. i. spec. 24-28) I may mention that the elongated legs, largely developed posterior trochanters, and often distinct posterior coxæ, render the motions of the insects belonging to it staggering when walking, which together with their oblong, subdepressed body distinguishes them at a glance. I have subdivided them from the cultriform or grooved mesosternal carina.

The second group (A. ii. spec. 29-35) is equally well characterized as the former by the more robust, pyriform and subconvex body of the insects. *S. pselaphoides* in the former and *S. advolans* in the present group, form connecting links between the two; especially *S. pselaphoides*, which in general appearance rather belongs to the second, upon closer examination, however, is easily ascertained to be an anomalous member of the former.

From the rounded or narrowed occiput I have divided the second group into two subdivisions, giving preference to the distinctions to be drawn from this part of the body to those to be derived from the thorax, which from the variety of shapes it assumes would naturally suggest itself for that purpose; but the gradations between the principal forms appear to me too many, five, and therefore too indistinct to adopt them.

As to the third group (B. spec. 36) the insect which alone forms it amongst those described below, is so different from any of the others that is peculiarities must strike any one at first sight.

A.

Species with a thick neck, abruptly formed and immersed in the thorax.

i.

Fourth joint of the maxill. palpi not acuminated; head subquadrato-ovate; eyes middling or small, finely granulated,

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little or not at all prominent; antennæ subapproximate at the base; posterior trochanters elongated, incrassated at the apex; thorax obovate; body elongate, subdepressed.

(a.)

Mesosternal carina slight, simple.

24. Scydmænus alatus. *N.*

S. dilute brunneus, pedibus antennisque dilutioribus, tarsis palpisque testaceis; pubescens. Long. corp. ¾ lin.

Antennæ art. 1° apice bi-acuminato, 3-4 subæqualibus, 5 præcedente majore, 6 longitudine inter 4 et 5, ovato, 7-8 subæqualibus, 9 majore. 7-9 *apice angustatis, tubiformibus,* 10-11 ovatis, clavam formantibus, *vel* art. 9 globoso, 9-11 clavam formantibus. Palpi maxill. art. ultimo minimo apice truncato. Mandibulæ dente bifido munitæ, basi fortiter abrupteque dilatatæ. Thorax foveis basalibus nullis. Pedes elongati.

I include in this species individuals with a two, and others with a three, jointed antennal club. The latter are further distinguished by having a slight sinuosity in the rounded outline of the basal angles of the thorax: by having the posterior part of the metathorax and the base of the abdomen sensibly incrassated: and the head rather less quadratic than the former. However, the individuals thus distinguished being in all other respects exactly like those with the two-jointed club, I cannot help looking upon all these distinctions as sexual ones and uniting the insects in the same species.

The head from the eyes to the neck is of a transverse subquadratic form merging into the oval by the angles being rounded off; the anterior part is narrowed. And this is the typical sculpture of the skull in all the five species of this group. The eyes in the present species are middling. The antennæ are rather approximated at the base, and inserted in the centre of the front under a ridge which runs across it from eye to eye. The first joint is biacuminated at the apex: the fifth is longer than the adjoining ones: joints 7-9 in the individuals with the two-jointed and 7-8 in those with the three-jointed club, are of a peculiar construction, being narrowed at the apex and fitting into each other like the tubes of

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a spyglass. The club joints are ovate, flat at the base; the last is large and obtusely acuminated. I consider the principal distinguishing character to lie in the remarkable structure of joints 7-9 of the antennæ. The maxill. palpi have joint 2 rather strongly incrassated at the apex, joint 3 obovate, narrowed at the base, joint 4 very minute, truncated at the apex. The mandibles are furnished with a bifid tooth and are strongly and abruptly dilated at the base. The thorax is of an obovate or obcardato-ovate form, being rather strongly rounded off before the middle and gradually narrowed below it; the usual basal impressions are wanting, the posterior margin has two slight sinuosities, the posterior angles are rounded off or obliquely truncated. Scutellum obsolete. Elytra furnished with a very short elevated ridge at the shoulder. Legs elongated; coxæ large, the two posterior ones rather distant from each other; two posterior trochanters much elongated, incrassated at the tip; apex of tibiæ subcylindric, but not narrowed, and hairy, especially in the 2nd pair; joints 2-3 of the tarsi of equal size, the first longer, the 4th a little shorter; two anterior tarsi slightly contracted, 2nd and 3rd pair more and more elongated. Penultimate segment of abdomen with strong longitudinal groove on the back.

25. Scydmænus femoralis. *N.*

S. staturâ et magnitudine præcedentis; testaceus. Antennæ art. 3-4 subæqualibus, 5 præcedente longiore, 6-6 gradatim minoribus, subglobosis, 7-8 apice fortius oblique truncatis, 9-11 gradatim majoribus, subglobosis, clavam formantibus. Palpi maxill. art. ultimo minimo semigloboso. Thorax magnus obovatus, basi rotundatus, 4 foveolatus. Elytra *apice truncata, 2-sinuata.* Pedes *femoribus 2 posticis medio constrictis.*

Of the general appearance of the former, but of a light yellowish colour, and well distinguished by the large thorax, truncated elytra, and abnormal construction of the 2 posterior femora. Antennæ with joints 7-8 rather strongly obliquely truncated at the apex, 9-11 forming a club, subglobose, flat at the base, the last acuminated and slightly cut away or even excavated on the inside of the apex. Last joint of

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maxill. palpi semiglobose, these otherwise the same as in the former. Thorax and elytra of *S. alatus*; the former, however, larger, rounded at the posterior margin, and with four basal impressions, the later slightly truncated at the apex and with slight sinnosity in the truncature on either side of the suture. Scutellum very small. Legs with the tibiæ slightly bent at the base, the apex as in the former; tarsi with joints 1-4 gradually decreasing in size, first pair contracted and furnished with brushes on the inside. The two posterior legs inserted rather distant from each other, the basal part of abnormal construction; the trochanters much elongated and incrassated at the tip, whilst the femora at the place of the juncture rather abruptly narrowed, bent, and slightly compressed,—they being, at the same time, thinner than the adjoining apex of the trochanter; the constriction very striking.

26. Scydmænus Ceylanicus. *N.*

S. alati colore, sed major et magis depressus; long. corp. ¾ lin. Caput magnum, robustum, thoracis latitudine. Antennæ basi non approximatæ, art. 3-4 et 5-7 inter se subæqualibus, *arcum formantibus*, 8-10 gradatim majoribus, subglobosis, depressis apice oblique truncatis, 11° magno, conico, 8-11 longius pilosis, clavam formantibus. Palpi maxill. art. 4° minimo, semigloboso. Thorax ovatus, foveis basalibus nullis. Elytra apice singulatim rotundata. Pedes validi tarsis 2 ant. art. 1° *subtus in spinam sat fortem producto*

An anomalous species, especially with regard to the antennæ which are much less approximated at the base than those of the rest of the species belonging to this group, and with regard to the two posterior coxæ, which, on the contrary, are more approximated than in any of the species just referred to. The insect is of the light brown color of the two former, but larger and more depressed. The head is strikingly large and heavy, of the width of the thorax, in its hind part, which is strongly transverse, the oval form is prevailing over that of the square. Eyes small. Antennæ inserted under two strong protuberances rather than under a ridge, their club four jointed, joints 3-7 forming an inwards-bent section of a circle, joints 8-10

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strongly compressed, obliquely truncated (subperfoliated), 11 large, conic. The 3rd joint of the maxill. palpi is of an oblongo-ovato shape, the external basal angle is prolonged into a small peduncle inserted in the apex of the 2nd joint, the 4th joint, (about the semiglobose shape of which I am not quite satisfied), appears to be obliquely inserted in the tip of the preceding. Thorax oval, of a similar shape to that of the former, anterior margin slightly emarginated. Scutellum obsolete. Elytra with the traces of a humeral costa, separately rounded off at the apex. Legs strong, 2 posterior coxæ not more distant from each other than the 4 anterior ones; tibiæ elongated, bent at the base and apex, at the latter place slightly narrowed, subcylindric and hairy; tarsi with joints 1-4 subequal, in the first pair strongly contracted, joint 1 of this pair produced in a spine on the inside.

(*b*)

Mesosternal carina middling, grooved.

27. Scydmænus intermedius. *N.*

S. alati statura sed major et robustior, colore obscuriore; long. corp. ¾ lin.

Antennæ art. 1° apice bi-acuminato, 2 et 5, 3 et 4, 7 et 8 inter se subæqualibus, 6 quarto paulo minore, obovato, 7-8 subglobosis apice oblique truncatis, 9-11 gradatim majoribus, obovatis, clavam formantibus, 11 acuminato. Palpi maxill. art. 3° obovato, 4° minimo semi-globoso. Thorax subrotundatus, basi 4-foveolatus. Elytra apice singulatim rotundata. Mesosternum sat fortiter carinatum *carina dorso deplanata canaliculata, apice acuminata.*

This species stands in the middle between *S. alatus* and *pselaphoides*. To the former it is allied by its general appearance rather than by anything else, differing from it very much in the structure of the antennæ and the mesosternal carina. To the latter on the contrary it is allied by similarity in the structure of the said carina, differing, however, from it in general appearance. The color is that of *S. alatus*, but a shade or two darker, the insect being at the same time larger and altogether more robust. The eyes are small. Antennal

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club three-jointed, the joints forming it gradually increasing in size, obovate, flat at the base, the last acuminated. Scutellum obsolete. Elytra with two slight basal impressions, the trace of a humeral costa, separately rounded off at the apex. Legs elongated as usual; two posterior coxæ distant, tibiæ straight, subcylindric, but not narrowed at the apex, the four anterior ones hairy; tarsi with joints 1-4 almost inperceptibly decreasing in size—or perhaps 2-3 equal,—the anterior ones slightly contracted: these and the intermediate ones hairy on the inside. Mesosternal carinà middling, flat on the back with a shallow but very distinct longitudinal groove or excavation, anterior part projecting, acuminated.

28. SCYDMÆNUS PSELAPHOIDES. *N.*

S. subpyriformi-ovatus, subconvexus, magis minusve brunneus, pedibus antennisque subtestaceis, femoribus apice nigrescentibus, tarsis palpisque testaceis; flavo-pubscens; long. 1¼ lin.

Antennæ art. 1° medioeri, apice biacuminato, 2-4 sensim minoribus, 5 et 2, et 3, 7 et 10 inter se subæqualibus, 9-11 clavam formantibus, 6-11 basi transversim, 6-8 apice oblique truncatis, 7-8 compressis. 9-11 obovatis. Mandibulæ dente bifido munitæ, basi dilatatæ et ciliatæ. Palpi maxill. art. 3° inverte conico, 4° minimo apice truncato. Thorax obovatus, latitudine quartâ parte longiore, basi 4 foveolatus. Elytra apice singulatim rotundata. Mesosternum præcedentis.

An anomalous species with regard to its general appearance which differs considerably from that of the rest of the group, and makes it, as I have remarked above, the connecting link between this and the following group. This is the largest species I have hitherto met with. The system of coloration is the usual one: more or less deep brown, legs and antennæ lighter, tarsi and palpi quite so. Eyes middling. Antennæ with a three-jointed club, the joints 6-8 are slightly truncated at the apex, 7 and 8 being at the same time strongly compressed have a subperfoliated appearance. The mandibles are furnished with a bifid tooth. The 3rd joint of the maxill. palpi is of the shape of an inverted cone, the 4th minute and truncated at the apex. The thorax is of an obovate form, about one quarter longer than broad, rounded off before and gradually narrowed below the middle, subquadratic at the base, impres-

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sed with four foveæ or pits, the posterior angles rounded off. Scutellum minute Elytra with two short humeral costæ, separately rounded off at the apex. Legs stout; two posterior coxæ distant; tibiæ slightly bent at the base, subcylindric at the apex, the four anterior ones hairy; tarsi with joints 1-4 gradually decreasing in size, the anterior ones dilated, the joints transversely triangular, the intermediate pair hairy on the inside. Mesosternum of the preceding. Metasternum with a slight longitudinal depression down the middle. Penultimate abdominal segment grooved on the back as in *S. alatus*. In the enlargement of the anterior tarsi lies, as in the other beetles, undoubtedly a sexual distinction, as it is not equally strong in all individuals.

I may mention here that upon some of the inviduals I found ticks (some g. allied to *Ixodes* but not a *Gamasus*) fastened, one of them having made a wound such as, supposing it to be inflicted at a corresponding place and on a proportionate scale, few animals of a higher order, would, I think, have survived. Still this little beetle appeared perfectly at its ease. The parasite alluded to had fastened itself right in the centre of the forehead, and the wound it had inflicted in this,—one would imagine most dangerous place,—was a deep hole or pit with a callous border. The latter led me to infer that the injury was an old one, and the tick being at the time fastened in it (and this so firmly that I had some difficulty in detaching it), I felt sure it had been in this position for months. The injury was observable under a slight magnifier, and I think to compare it to one inflicted by a rifle-ball would be greatly underrating its importance.

ii.

Fourth joint of the maxill. palpi acuminated; mesosternal carina strongly developed; eyes large, prominent, coarsely granulated; antennæ distant at the base; 2 posterior trochanters simple; thorax variable; body robust, pyriform, sub-convex.

(*a*)

Occiput rounded.

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30. Scydmænus advolans. *N.*

S. long. corp. ¾ lin. Antennæ art. 3 et 4, 5 et 6 inter se subæqualibus, obovatis, 7 majore, subgloboso, 8-10 subglobosis, basi transversim, apice oblique truncatis cum 11° conico clavam formantibus. Palpi maxill. art. 3° elongato, inverte conico, 4° mediocri. Mandibulæ tenues, medio acuminate 1-dentatæ, basi abrupte dilatatæ. Thorax ovato-rotundatus, apice fortius angustatus, basi leviter 2-sinuatus, 5-foveolatus. Elytra apice singulatim rotundata.

The insect is of brown color, the antennæ lighter, the legs still more, and the tarsi and palpi quite so, the femora are dark towards the apex, the head, thorax and suture are occasionally of chestnut color. It is, as usual, pubescent. The sculpture of the head in this and the following species not, as in the preceding, based upon the oblong square or the oval, but rather upon the form of a ball, which, in a more or less compressed state, is always perceptible; in some instances it is narrowed on one side. In the present species the head is heavy and subglobose. The eyes are large, prominent and coarsely granulated. The antennæ are inserted distant from each other under two protuberances of the anterior part of the forehead. The club is 4-jointed, the joints composing it being flat at the base, and, with the exception of the last, obliquely cut away at the apex, the last itself being conic. The maxill. palpi have joint 3 rather elongated and of the form of an inverted cone, joint 4 middling, acuminated. The thorax is of a rounded oval shape and rather strongly narrowed towards the apex. The scutellum is obsolete. The elytra have the usual rudimentary costæ at the shoulders and are separately rounded off at the apex. The legs are middling, 2 posterior coxæ inserted close together, trochanters all simple, tibiæ slightly bent at the base, narrowed and subcylindric at the tip, the 4 anterior ones hairy, tarsi with joints 2-3 subequal, the first a little longer and the 4th shorter, the two anterior ones slightly contracted.

I include in this species some individuals which slightly differ from the foregoing description, being more robust, covered more densely and with longer hair, especially on the

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occiput and thorax, with the latter rather obconico-ovate and the costæ of the elytra more distant, and moreover occasionally of a chestnut color.

30. Scydmænus pubescens. N.

S. præcedente gracilior; long. corp. ¾ lin. Antennæ art. 3 et 4, 5 et 6 inter se subæqualibus subcylindricis, 7° secundo paulo minore, *fortiter cylindrico*, 8-10 subglobosis cum 11° conico clavam formantibus. Palpi maxill. art. 3° inverte conico, 4° minuto. Mandibulæ tenues, medio obtuse obsoleteque uni-dentatæ, basi abrupte dilatatæ. Thorax conicus, latitudine haud longior, basi 4-foveolatus. Elytra et pedes præcedentis, tibiis tamen apice leviter arcuatis.

Less robust than the former, and further distinguished from it by the 7th antennal joint, (the one preceding the club) which is of a strongly cylindric shape, by the minuteness of the last joint of the maxillary palpi, the obtuse and nearly obsolete tooth of the mandibles, the short-conical form of the thorax, and the tibiæ which are slightly bent at the apex.

31. Scydmænus pygmæus. N.

S. staturâ et colore præcedentis sed longius pubescens et sesqui minor; long. corp. ½ lin. Antennæ art. 4 et 4, 5 et 6 inter se subæqualibus, 7° majore, ovato, 8-10 subglobosis, fortius compressis 11° clavam formantibus, hoc magno, obconico, apice obtuso. Palpi maxill. art. 2° tenuiore, 3° inverte conico, 4° minuto. Mandibulæ obsolete uni-dentatæ Thorax conicus latitudine parum longior, elytris fortiter applicatus, basi 2-sinuatus et 4-foveolatus. Pedes et elytra præcedentis, his tamen amplioribus.

Strongly allied to the two preceding species, still very much smaller, more compact and covered with longer hair—thus of rather a different appearance regardless of its size. From *S. pubescens* this species would principally differ in the shape of the 7th antennal joint, also in that of the first three club joints which are much more compressed and more hairy in *S. pigmæus*. The thorax of the latter is more firmly applied to the base of the elytra; the latter have a fuller, more robust appearance about them; the palpi are more slender, and the tooth of the mandibles is pointed. From *S. advolans* it would prin-

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cipally differ besides in the generalities mentioned above, in the shape of the thorax, and in some of the points in which it differs from *S. pubescens*.

(*b*)

Occiput narrowed.

32. Scydmænus glanduliferus. *N.*

S. robustus; long. corp. ¾ lin. Antennæ art. 3-7 sensim majoribus, 8-10 globosis, fortiter compressis cum 11° *glanduliformi* clavam formantibus, longe ciliatis. Palpi max. art. 2° tenuiore, 3° inverte conico, 4° mediocri. Thorax conicus latitudine basali haud longior, elytris fortiter applicatus, basi 2-impressus, in impressionibus 2-foveolatus.

Of the size of *S. advolans* and the plump shape and color of *S. pygmæus*, the latter being rather lighter than that of *S. advolans*; it has the longer (especially on the occiput and thorax) hairy vesture of the former. The occiput is slightly narrowed behind. The antennal club is composed of four joints, the first three of which are strongly compressed, the 4th being plump and of the shape of an acorn with its cup; all are strongly ciliated. The thorax is conic, firmly applied to the base of the elytra, as in the preceding species, depressed, and with two pits at the base posterior margin with two sinuosities. The shoulder ridges of the elytra are short, but rather strongly marked. The tibiæ are narrowed, sub-cylindric and hairy at the apex. Joints 2-3 of the tarsi are subequal, the anterior pair more, the intermediate less, contracted.

33. Scydmænus graminicola *N.*

S. gracilior; long. corp. ¾ lin. Antennæ art. 3 et 4, 6 et 7, 9 et 10 inter se subæqualibus, 5° adjacentibus paulo longiore, 3-7 subcylindricis, 8 subgloboso, 9-10 fortiter globosis cum 11° clavam formantibus. Palpi maxill. art. 3° inverte conico, 4° mediocri. Mandibulæ apice arcuatæ, medio acuminate 1-dentatæ, basin versus *sensim dilatatæ*. Thorax obconicus basi depressus, 2-sinuatus et 2 foveolatus, rectangulatus. Pedes *tibiis elongatis* basi apiceque arcuatis.

Of the usual brown color, legs and antennæ lighter, tarsi and palpi quite so, femora nigrescent at the apex, hairs of occiput and thorax rather long. The former slightly narrowed

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behind, the head thus of a somewhat rhomboid form. Antennal club composed of three joints, the first two of which are strongly globose, the last being acuminated and slightly cut away on one side at the apex. The mandibles are furnished with an acuminated tooth at the middle, bent at the apex, and, what is rather uncommon in this g., gradually enlarged towards the base. The thorax is obconic, rather longer than broad. The elytra are somewhat more stretched than usual in this group, the rudimentary humeral costæ are rather prominent, they are separately rounded off at the apex. Tibiæ, more or less elongated, slightly bent at the base and apex, at the latter place sub-cylindric and hairy. Tarsi with joints 2-3 subequal, first pair slightly contracted. A sexual distinction appears to be expressed in the length of the tibiæ, which are less elongated in certain individuals, which are at the same time less robust than the others. The insect is easily distinguished by its general appearance.

34. Scydmænus pyriformis. *N.*

S. supra castaneus, subtus brunneo-testaceus, pedibus antennisque dilutioribus, tarsis palpisque flavo-testaceis, antennarum clava nigricante long. corp. ½ lin.

Antennæ art. 3-8 fere subæqualibus excepto 5° parum longiore, 8° subgloboso, minore, 9-10 subglobosis majoribus cum 11° acuminato clavam formantibus. Palpi maxill. art. 3° inverte conico, 4° minuto. Pedes coxis 2 posticis distantioribus; tibiis 2 anterioribus basi apiceque leviter arcuatis, reliquis subsimplicibus.

A pretty little species, at once distinguished by its color, which is chestnut, darker at the base and suture of the elytra, and light, more or less brownish or yellowish below, the antennæ being of the latter color with a nigrescent club. The occiput is slightly narrowed, the head altogether plump, heavy and transverse. The antennal club is composed of 3 subglobose joints the last of which is acuminated and slightly cut away on one side as in some of the preceding species. The thorax is obovate, broadest below the middle and gradually narrowed towards the apex. The elytra have the usual two shoulder-ridges and are rather strongly dehiscent at the

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apex. The two posterior coxæ are rather distant at the base; the tibiæ are slightly angustated and subcylindric at the apex, the four anterior ones hairy, the first pair, moreover, slightly bent at the base and apex, but the rest nearly straight

35. SCYDMÆNUS ANGUSTICEPS. *N.*

S. castaneus, antennis pedibusque dilutioribus, tarsis palpisque testaceis; long. corp. 1 lin.

Caput magnum occipite *fortiter angustato*, subtrigono, hoc cum thorace longe pilosis. Antennæ art. 3 et 4, 5 et 6 inter se subæqualibus, 7-11 gradatim majoribus, vel 9-10 subæqualibus, subglobosis, 8-10 leviter depressis cum 11° clavam formantibus. Palpi maxill. art. 2° tenuiore, 3° inverte conico, 4° medioori conico-acuminato. Thorax obconicus, basi subquadratus, 2-sinuatus et 4-foveolatus. Elytra costis 2 fortioribus abbreviatis. Tibiæ subrectæ.

A handsome species of more or less deep chestnut color with lighter legs and antennæ. The head is large, heavy, and from the eyes to the neck strongly triangular; the occiput and thorax are covered with long hair, which adds much to the peculiar appearance of the insect. The antennæ are thick and robust, the club four-jointed. The thorax is subquadratic at the base up to the middle and conic towards the apex. The punctures or pits at the base are four in number. The scutellum is small. The humeral costæ are stronger developed than in any of the other species, and traceable to the middle of the elytra. The tibiæ are nearly straight: subcylindric at the apex: the four anterior ones hairy. The tarsi have joints 2-4 nearly subequal.

B.

Species without a neck.

36. SCYDMÆNUS OVATUS. *N.*

S. *ovatus*, convexus, brunneus; long. corp. ½ lin.

Caput subquadrato-ovatum. Antennæ art. 3-11 sensim incrassatis, 9-11 subglobosis, depressis cum 11° magno, conico clavam formantibus. Palpi maxill. art. 4° minuto acuminato. Thorax *amplius semiorbicularis*, margine posteriore medio producto, basi 2-foveolatus.

The color of this insect is, as usual, shaded off from brown to light yellow. However, in other respects it differs materially

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from all the preceding species. The body is regularly oval, thorax and elytra convex, pubescent. The head is subquadratic-ovate the eyes rather small but prominent, the neck is altogether wanting. The antennæ are at the base as distant from each other as they can be, being inserted below the eyes; the club is three-jointed; the joints increase gradually in size from the third to the eleventh. The maxill. palpi have the second joint slender, the third rather pear-shaped, the fourth minute and acuminated. The thorax is very ample, semiorbicular, of the shape and nearly the size of the apical half of the elytra, the basal angles are acuminated and slightly envelope the shoulders, the posterior margin is prolonged in the middle, towards the scutellum the foveæ or basal impressions are two, and rather distant from each other. Scutellum obsolete. Elytra with two depressions at the base. Tibiæ straight; tarsi with joints 1-4 subequal or very nearly so. Mesosternal carina middling.

No. IV.

Cyclosomus flexuosus. *Fab.* *

To judge from what Lacordaire says of this g. in his *g. des Col.*—a work upon which, as I have said elsewhere, I look as containing the essence of all former researches—it would appear that the present species differs very materially from the three others hitherto described, namely, in the flatness of the antennal joints, in the serrated edges of the tibial spurs, in the existence of the tarsal brushes in the male, and

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* This insect was erroneously described by me in the first edition of these Papers. However, I retain part of my description, as it notices some peculiarities of the insect, of which I find no mention made in any of the works within my reach. It was owing to these peculiarities, and Lacordaire's statement that the three known species were of yellowish and green colour, as well as to having no detailed description of the *C. flex*, that I described it as new.

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in the color—to say nothing of some other minor distinctions. The first three of these peculiarities—too important not to have been noticed by Lacordaire or any other describer of the g. had they been aware of them—add considerably to the characteristics which already constitute this g. one of the most remarkable of the extensive family of the *Carabidæ*.

The antennæ are strong, stiff and short, reaching hardly beyond the base of the thorax: joint 1 is of middling size, 2 short, 3-4 are subequal, 5 rather shorter, 6-11 still shorter, subequal: joints 3-11 *are strongly compressed and pubescent, but only on the narrow side.* The tibiæ are strongly bi-calcarated at the apex, the inner spur being longer than the outer one. In all legs these spurs are slightly compressed and serrated along the two narrow sides. Joints 1-4 of the anterior male tarsi, are slightly dilated, the apex of the first, second, and third, being at the same time furnished each with *two small white brushes*, below fenced in by spines. In the intermed. tarsi of the male, the apical half of joint 1, and joints 2 and 3, are furnished on the inner side with strong brushes of reddish colour, bordered by rows of spines, *the entire lower surface forming one thick brush*, and not two, as in the anterior pair.

Regarding the habits of these insects, one would feel inclined to suspect them to be of a semi-aquatic nature, that is, the insects to frequent the banks of rivers, or other damp places; and I know that some entomologists are under the impression, that their mode of living is that of the g. *Omophron*. However, in my experience, the direct contrary is the case. *They live in the driest, hottest, and sandiest places that can be found, where they burrow in the sand, exactly in the manner of the well-known g. of the Amaras.* I have of late taken considerable numbers of them in the Cinnamon Gardens of Colombo, in holes made by the rooting up of weeds, into which they had run, and could not escape, the loose sand giving under them whenever they attempted to do so. When wishing to find them, I had to search the corners of these holes, where some leaves had usually collected, when I would sometimes

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dig up eight at a time, not seldom rather deep in the sand. They are quick of motion, and being thus pursued, immediately bury themselves in the sand.

The diagnosis as given by Lacordaire requires at all events to be entirely recast, and the g. to be removed from the tribe *Cratoceridæ*, (one of the characteristics of which is the want of foot-brushes in the male) in which he has placed it.

III. OCHTHEPHILUS, *n. g.* *N.*
Fam. CARABIDÆ.
Trib. PAGONIDÆ.

Corpus oblongum, subparallelum, valde depressum. Caput magnum antice trigonum; oculis magnis, ovatis, prominulis; collo forti Mentum subquadrate emarginatum, lobis extus fortiter rotundatis, apice abrupte acuminatis, dente parvo acuminato. Ligula parva apice quadrate truncata, libera, paraglossis setiformibus marginem anteriorem longe sperantibus. Palpi robusti art. 4° elongato tenui, acuminato; maxillares art. 3° interne, 2° externe incrassato; labiales art. 3° robusto externe incrassato, 2° parvo, cylindrico. Labrum parvum basi, angustatum subtrigonum, antice emarginatum. Mandibulæ elongatæ, porrectæ, trigonæ, apice arcuatæ, infra medium pluries dentatæ. Antennæ robustæ corporis med. fere attingentes, art. 1° et 11° mediocribus, subæqualibus, 2-4 et 5-10 inter se subæqualibus, illis subcylindricis, his cum 11° ovatis. Thorax subcordatus basi quadratus. Pedunculus brevis. Elytra apice rotundata. Pedes anteriores tibiis profunde emarginatis tarsis leviter contractis, art 1-4 gradatim minoribus, art. 1° subcylindrico, 2-4 subtrigonis, hoc subtus apice spino tenui munito, 5° sat magno, unguibus simplicibus.

37. OCHTHEPHILUS CEYLANICUS.

O. alatus brunneo-testaceus, pedibus palpisque testaceis, tenuiter pubescens, fronte profunde 2-sulcata; elytris obsolete striatis, in striis punctatis; long. corp, 1½ lin.

In fluviorum ripis Bembidiorum more victitat.

Apparently allied to *Trechus*, from which, however, it would seem to differ in the structure of the palpi, the labrum, &c.

The head is as broad as the thorax, and altogether of about the same size. It is strongly triangular from the eyes to the tip of the mandibles, the forehead is impressed with two deep

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longitudinal furrows; the eyes are large, rather oval and prominent; behind them the head is abruptly contracted into a thick neck. The antennæ are long and thick, reaching nearly to the middle of the body, joints 1 and 11, 2-4, 5-10 are subequal among themselves, 5-11 oval, 1-4 subcylindric. The labrum is small, rather triangular, being narrowed at its base, it is emarginated in front with a slight angle in the middle of the emargination. The mandibles are long, straight, triangular, bent at the tip only, dentated below the middle, the one more so than the other. The maxillæ are thin and slender, gently bent outwards at the base and inwards at the apex, the outer lobe corresponding with the inner one in shape and strength. The palpi are robust, both the maxillary and labial ones have joint 4 elongated, thin and acuminated, in fact needle-shaped, firmly implanted in the preceding one, not loosely hinged to it. The maxillary ones have joints 3 and 2 robust, the former swollen on the inner, the latter on the outer side. In the labial ones joint 3 is still plumper than in the others, but differs in shape by being incrassated on the outer, instead of the inner side, the second joint being at the same time quite small and cylindric. The mentum is large and simple as above described. The ligula is small, oblong, very slightly narrowed and transversely cut away at the apex, the paraglossæ separate from its sides a little below the anterior corners, they are setiform and reach much beyond it. The whole organ is of membranaceous texture: having, however, a more substantial centre or back. The thorax and elytra are simple and sufficiently described above. I may add that the former is divided by a longitudinal furrow and that both are furnished with a narrow margin at the sides. The scutellum is very small, and the abdomen furnished with a short peduncle. The legs are weak, simple, and nearly equal, the anterior tibiæ are deeply notched, the lower margin of the fourth tarsal joint of the same pair is furnished with a long thin spine, the apex of which fits in between the claws, as in *Lymnæum Steph.* I have been unable to discover any footbrushes or other sexual distinctions, in the specimens be-

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fore me and therefore conclude that accidentally they are all females.

The habits of the insect are those of the *Bembidia*, in whose society it lives upon the banks of rivers, taking, like them, readily to its wings. I have found it occasionally in considerable numbers upon the sandy banks of the Mahá Oya in the neighbourhood of Negombo close to the edge of the water.

IV. Creagris, *n. g.* *N.*

Fam. Carabidæ.

Trib. Lebiidæ *vel* Pericalidæ.

Corpus oblongum valde depressum. Caput magnum robustum; oculis mediocribus, ovatis, sat prominulis; collo brevi. Mentum forma ferri equini vel trifurcatum (hinc n. g. Creagris) lobis angustis, subparallelis, apice oblique truncatis, angulo interno producto, dente lobis parum breviore, tenui, acutissimo. Ligula magna cornea apicem versus dilatata, apice transversim truncata angulis rotundatis, paraglossis sat robustis connatis marginem anter. non attingentibus, apice vix liberis, ovatis. Palpi maxill. art 4° claviformi apice fertiter truncato, 3° parvo, 2° intus excavato; labiales art. 4° subelliptico, truncato. Labrum maximum, suborbiculatum, convexum. Mandibulæ parvæ basi obsolete unidentatæ, labro obtectæ. Antennæ robustæ humeros parum superantes submoniliformes art. 1, 3 et 11 longitudine fere subæquali, mediocribus, 2° parvo, basi cylindrico, apice rotundato, 4-10 subæqualibus, cum 11° ovatis. Thorax parvus, capite sesqui minor, transversus, longitudine duplo fere latior, infra med. fortius angustatus, basi parum prolongatus. Pedunculus brevis. Elytra apicem versus leviter dilatata, apice fortiter subquadrate truncata. Pedes robusti simplices subæquales, ant. tibiis profunde excavatis, omnes tarsis brevibus, art. 1° sequentium 2 fere longitudine, subcylindrico-trigono, 2-3 gradatim minoribus, 2° trigono, 3° transversim trigono, 4° magno, profunde bilobo, 5 mediocri, unguibus, simplicibus, art. 4° subtus dense penicillato.

38. Creagris labrosa. *N.*

C. picea, subtus dilutior, ore antennisque, coxis, trochanteribus, femorum tibiarumque apice et tarsis brunneis; dense punctata tenniterque pubescens; elytris striatis; long. crop. 4½ lin.

Specimina nonnulla prope Colombo nocte ad lumen cepi.

I consider this scarce and interesting insect to form a passage between the *Lebiidæ* and *Pericalidæ*, but am doubtful

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to which of these two tribes to refer it as, although it partakes of the characteristics of either, it is at the same time distinct from both. Distinguished in several respects, its most extraordinary character lies in the curious shape of the mentum. This is, however, easily described as large, of the shape of a *horseshoe* with a long, thin, very pointed tooth in the middle, the apical half of the sides (lobes) being at the same time gently dilated, the apex itself being obliquely cut away from the outer towards the inner side—the inner angle being the most advanced, and slightly dentated at the edge thus formed. Or it may also be described as *a fork* with the outer teeth somewhat enlarged, truncated at the apex and so forth. The other parts of the mouth have not much to distinguish them, with the exception, however, of the labrum which attains a very extraordinary degree of development, occupying *rather more than one third of the whole head, although the latter itself is large and heavy.* It is of a suborbicular shape, very slightly produced in front into an obtuse angle, is vaulted, covers the mandibles, has two longitudinal impressions at the sides of the base and is highly polished. The head has two impressions in front of the eyes, is densely punctured and thinly pubescent, it is strongly but gradually contracted behind the eyes and formed into a short neck. The antennæ are strong and reach a little beyond the shoulders, joints 1, 3 and 11, are of about equal length, middling, the former two subcylindric; joint 2 is small, rounded, 4-10 sub-equal and with 11 oval. The thorax is small, only half as large as the head, rather narrower, strongly transverse, nearly twice as broad as long, slightly emarginated in front, the anterior angles rounded, contracted below the middle, subquadratic and prolonged at the base, posterior angles depressed, longitudinally divided by a deep furrow. The elytra are striated, and, as the thorax densely punctured and thinly pubescent. The legs are strong, simple, and subequal, the anterior tibiæ are deeply notched, the first joint of the tarsi is as long as the two succeeding ones together, subcylindric, the second triangular, the third of a similar but more transverse form, smaller; all three have the apical angles

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acuminated, the fourth is large and deeply bilobed, the fifth middling, thin, the claws simple. The tarsi are altogether short and strong, the first joint is furnished with longer, the second and third with shorter stiff hair, whilst the fourth is strongly penicillated below. The anterior tibiæ are slightly spinose, the others more so.

The legs in all my specimens are exactly the same, and I hardly know whether they are males or females. The insect has a peculiar, rather strong smell about it, resembling that of soap.

V. Heteroglossa, *n. g.* *N.*
Fam. Carabidæ.
Trib. Galeritidæ.

Corpus oblongum, subparallelum, depressum, tenuiter hirsutum, Caput mediocre, oculis semiglobosis sat prominulis; collo brevi. Mentum sat profunde subquadrate emarginatum, lobis magnis extus fortiter rotundatis apice abrupte acuminatis, dente magno excavato, apice leviter inflecto, obtuso, magis minusve profunde sinuato. Ligula subcornea apice libera, truncata: vel quadrata vel obconica vel leviter bisinuata; paraglossis cylindricis, marginem anteriorem longissime superantibus, magis minusve incurvatis. Palpi hirsuti art ultimo sat elongato, subcylindrico, apice truncato vel subtrigono. Labrum transversum antice emarginatum. Mandibulæ validæ trigonæ, apice arcuatæ, basi pluries dentatæ. Antennæ robustæ corporis med. attingentes, art. 1° incrassato sequentibus 2 longiore, 2° parvo, 3-11 subæqualibus. Thorax subcordatus, basi transversim truncatus leviterque prolongatus. Pedunculus brevis. Elytra apice fortiter subquadrate truncata, costata costis 16 majoribus, in interstitiis subtilissime bicostulata, in sulcis (sulco e tribus inter costas binas majores medio excepto) tenuiter pilosa, in omnibus transversim rugulosa. Pedes anteriores tibiis sat fortiter emarginatis, tarsis maris art. 1-3 leviter dilatatis, subtus squamularum seriebus 2 munitis, art. 1° elongato-trigono, 2-3 rotundato-trigonis, 3° præcedente parum minore, 4° parvo, cordato, 3° plus sesqui minore, his omnibus angulis acuminatis, 5° magno, unguibus simplicibus.

This diagnosis may appear somewhat vague, still I have been unable to express the characteristics of the insects from which it is drawn in more precise terms, although they have features quite peculiar to themselves by which they are easily recognised when once seen.

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The points on which the three species which form this genus more or less disagree are the following :—

1) The labrum—is more transverse in *H. elegans* and less deeply emarginated in *H. ruficollis* than in the other two species respectively—still in all three it is *emarginated*, and has moreover the peculiarity of being furnished with bristles at the two anterior corners.

2) The mentum—is subquadratically emarginated, the lobes being strongly rounded on the outer side and abruptly acuminated at the apex. At the base of the emargination it is furnished with a broad, excavated tooth, which is inflected and obtuse at the apex. So far all three species agree. However, whilst in *H. elegans* and *ruficollis*, this tooth is slightly emarginated at the apex, it is sharply notched in *H. bimaculata*,—in fact bilobed, the lobes being large and rounded at the apex. I look upon this notch, which is sharp but not deep, as a mere variation from the emargination existing at the apex of the tooth of the two former species.

3) The palpi—labial as well as maxillary have their terminal joint truncated at the apex—and so far again all three species agree. However, whilst this joint is of elliptic form in the palpi of *H. ruficollis*, it is in *H. elegans* only so in the labial ones, that of the maxillary ones being cylindric at the base. In *H. bimaculata* finally, this joint is rather clubshaped or subtriangular and more strongly truncated than in the two former species.

4) The ligula—is of subcoriaceous texture, middling size, the shape of an oblong square, free and transversely truncated at the apex. These characters are common to all three species and in *H. ruficollis* I have nothing to add to it. However, the anterior margin, which is straight in this species, is slightly bisinuated in *H. elegans*, the outer angles being acute and the central one obtuse. The ligula of *H. bimaculata* differs from both the former in as far as it is narrowed towards the apex and depressed towards the sides and the front, the anterior margin is otherwise cut away straight, without any sinuosities, but it is rather strongly armed with

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bristles. The paraglossæ agree in all three species in as far as they are highly developed, reach much beyond the anterior margin of the ligula and are more or less bent inwards. Their greatest development they assume in *H. elegans*, in which they nearly touch each other in front of the anterior margin, being cylindric and slender at the same time. In *H. ruficollis* the paraglossæ are somewhat shorter and straighter, and in *H. bimaculata* still more so.

On all other points the three species perfectly agree; in saying which I lay particular weight upon the unusual sculpture of the elytra, and the rather peculiar hairy vesture of the insects, bearing also in mind their general appearance, proportions, system of coloration, mode of living, etc. As to the hairy vesture of certain parts of the body and the sculpture of the elytra, it is true that these are not generally looked upon as of much importance; however, they appear to me so in this instance, as they present certain unusual variations, repeated in all three species. The hairy vesture consists in thin yellowish or reddish hairs, thinly seminated over the back, and still more thinly over the whole of the lower surface of the insects, being at the same time longer at the latter place. This vesture acquires its greatest density on the legs, especially the tibiæ and tarsi, whilst their uniform presence at the palpi forms almost a generic character. The elytra are exquisitely sculptured into about eight larger costæ on either of them and into two smaller ones between every two of these; the furrows thus formed are finely transversely rugose and—with the exception of the central furrow between every two larger costæ—thinly pubescent.

39. Heteroglossa elegans. *N.*

H. supra rufo-castanea, capite obscuriore, maculis 2 humeralibus obsoletissimis ferrugineis; subtus dilutior, pedibus, antennis oreque subtestaceis, elytris ad angulos apical. extern. testaceis; long. corp. 3½ lin.

In lacus Colombensis ripis sub vegetab. putrescent. non infrequenter cepi.

An agile, pretty little insect of chocolate color and with its family features about it. Head smooth, polished, above

and below slightly punctured, with two impressions in front of the eyes, anterior angles of labrum rather acuminated. Thorax deeper and more densely punctured than the head, with the elytra thinly hirsute, rather strongly emarginated in front, less so behind, sides, especially at the basal angles, depressed, divided longitudinally by a deep furrow. Scutellum, like thorax, punctured and hairy. Elytra with the inner apical angle right and the outer rounded off, largely punctured within the margin, especially near the apex. Tibiæ with a row of larger spines down the outer and a row of smaller ones down the inner side, four calcarated at the apex, the two inner spurs larger.

40. Heteroglossa ruficollis. *N.*

H. colore præcedentis sed obscurior, thorace pectoreque rufo-testaceis, antennis art. 3 primis nigrescentibus; long. corp. 4½ lin.

Cum præcedente et per occasionem nocte ad lumen cepi.

The shape of the body is quite that of the former but the insect is larger. The head is less distinctly punctured than in the former, and there is an additional impression in the middle of the forehead. The thorax is also less deeply punctured, but the divisional furrow is more so than in the preceding species. The anterior tibiæ appear somewhat less deeply notched. There is nothing else to add to the description that has not been pointed out already.

41. Heteroglossa bimaculata. *N.*

H. subcastanea, thorace dilutiore, capite rufo-testaceo, elytris ante medium maculis 2 flavis, pedibus abdominisque apice testaceis; long. corp. 5½ lin. variat colore obscuriore et dilutiore.

Ubi præcedentes sed infrequenter legi.

Head, with the exception of the forehead, deeply punctured, with two impressions in front of the eyes, anterior angles of labrum rounded. Thorax densely and deeply punctured, with elytra thinly pubescent. The latter with a round yellow spot at the middle of either. This species is capable of discharging a pungent, blistering liquid of brown color

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and strong smell from the anus. I have often handled the other two species but observed nothing of the kind.

No. V.

THE TRIGONOTOMIDÆ with an elliptic terminal joint of the palpi are abundantly represented amongst the Ceylon *Carabidæ*, thus making amends for the want of other tribes of the section to which they belong. I have now before me a great many individuals of different species which I have endeavoured to distribute into genera after the works of Lacordaire, Dejean and others of less importance.

A single glance almost convinced me that they must belong either to *Abacetus*, *Distrigus*, or *Drimostoma*—genera closely allied, and whose principal, (in fact only essential), distinction would appear to reside in the shape of the mentum-tooth. If it is a well established fact, which cannot be doubted, from the above authors, that this tooth is *pointed* in *Drimostoma*,—*large, rounded, equalling the lateral lobes* in *Abacetus*,—and *large and truncated* in *Distrigus*,—the species described below could not, as to their genera, be distributed otherwise than I have done, namely, five *Distrigi* and one *Drimostoma*. The species which I have drawn to the former genus have a large, more or less square tooth, slightly rounded at the anterior angles. It is impossible to call this tooth of the five species *pointed* in any way; they cannot therefore belong to the genus *Drimostoma*; nor can any of them be drawn to *Abacetus*, which genus is moreover apparently exclusively African. As to the insect which I

☞ *Barysomus Gyllenhali* Dej. A gross oversight of the vesture of the anter. male tarsi and some incorrect information regarding the insect I received from Europe led me into the error of describing it as new in the first edition of these papers. However, having since examined it more closely, I may mention here that joints 2-4 only of the anterior male tarsi are furnished with squamulæ below, and not joints 1-4, as stated by other authors.

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have placed in the genus *Drimostoma*, its mentum-tooth is not exactly pointed, but it is altogether narrower than in *Distrigus* and might well be called "*assez aigué*," as Dejean describes it. This insect differs, moreover, very materially in general appearance as well as in its details from my *Distrigi*; and I feel sure that it belongs to the genus in which I have placed it, although it does not quite agree with Lacordaire's description—the labrum being emarginated in front, the second joint of the maxill. palpi exhibiting nothing unusual, &c. As to the species which I have established, I feel very certain that they are new and good ones, as it would appear from the quotations in Lacordaire "*Gen. d. Col.*" that since Dejean's descriptions no new ones of Indian species have been published.

These insects live in the manner of the European *Feronidæ*, but appear to affect rather damp localities, some of them take freely to their wings and fly commonly into houses in the evenings during the rainy weather.

42. Distrigus costatus. *N.*

D. nigerrimus, nitidus, subtilissime parce punctulatus, ore pedibusque piceis, tarsis antennisque castaneis, palpis brunneo-testaceis, long. corp. 4¾ lin.

Capite clypeo fronteque leviter excavatis, hac impressionibus 2 lateralibus semilunaribus profundissimis rugulisque nonnullis transversis; mandibulis fortiter sulcatis; menti dente magno excavato; thorace longitudine parum latiore, breviter obcordato, lateribus rotundato, basin versus angustato, basi truncato medio leviter emarginato, antice lateribus fortiter deflexo, dorso posticeque plano, basi longitudinaliter profunde 2-impresso, inter impressionibus leviter transversim rugoso, ad marginem ant. et post. obsolete sulculato, dorso rugulis nonnullis transversis subtilibus, linea med. longitud. subtili extremis profundis diviso; elytris profunde striatis, interstitiis fere planis, puncto ad striam 2ᵐ medio obsoleto; *tarsis dorso fortiter* 3-*costatis*; prosterno plano.

Sub quisquiliis in ripis lacus Colombensis communis.

Apparently closely allied to *D. impressicollis*, Dej. However, if the description given in the Spec. gen. embraces all the characteristics of this latter species mine is undoubtedly different from it. Dejean says nothing about the costæ on the

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back of the tarsi which are the principal characteristics in my species, nor are such costæ of general occurrence or of so little importance that it could be supposed they had been left unnoticed by Dejean from these reasons. I cannot possibly call the thorax of my *D. costatus* "subquadratic;" it is rounded at the sides, narrowed behind, and cut away at the base. The striæ of the elytra of my species are not punctured in the bottom, as those of the *D. impressicollis* are stated to be. In mentioning the inter-antennal impressions Dejean would certainly not have overlooked the depression in the centre of the forehead nor that of the clypeus, which distinguish my insect, had they existed in the one he described. The former is round: the latter transverse. I further fail to discover in my species the "*reflet un peu changeant*" of the elytra, and that the base of the thorax is "*assez fortement ponctuée et que les points se confondent souvent ensemble*;" nor do I consider the interstices of the elytra "*relevés, presque arrondis*," or the head "*un peu rétrécie posterieurement*;" the skull is of the same breadth from the antennæ to the occiput.

43. Districus submetallicus. *N.*

D. supra niger æneo-micans, nitidus; subtus piceus, pedibus, ore antennisque obscure castaneis, tarsis brunneo-testaceis long. corp. 3 lin.

Capite præcedentis sed fronte haud excavato; mandibulis strigosis; menti dente mediocri; thorace breviter rotundato-obcordato, præcedente lateribus magis rotundato, antice magis deflexo, postice fortius quadrato, hic 3-impresso, impressione media lateralibus minus profunda ad apicem prolongata, inter impressionibus punctato longitudinaliterque ruguloso; scutello excavato; elytris striatis, ad striam 2m ante medium utrinque puncto impresso, interstitiis deplanatis; tarsis lævibus; prosterno profundo canaliculato.

Ubi præcedentem specimen singulum m. cepi.

44. Districus rufo-piceus. *N.*

D. rufo-piceus, nitidus, pedibus, thoracis elytrorumque margine testaceis, antennis brunneo-testaceis, mandibulis brunneis, long. corp. 3 lin.

Capite inter antennas profunde longitud. 2-impresso, fronte medio leviter depresso, labro quadrato-rotundato, mandibulis infra medium sulcatis, menti dente mediocri, excavato, apice subrotundato; thorace D.

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costati, sed parum brevior, basi 2-impresso, linea media longitud. fere obsoleta, rugulis nonnullis transversis subtilibus; scutello, elytris pedibusque præcedentis sed elytris puncto ad striam 2m infra medium obsoleto; prosterno leviter canaliculato.

In ripis lacus Colombensis specimen singulum legi.

45. Distrigus æneus. *N.*

D. supra æneus, subtus piceus, pedibus dilutioribus, antennis palpisque rufo-piceis, long. corp. 2½—3 lin.

Capite ante oculos profunde oblique 2-sulcato, rugulisque nonnullis transversis, clypeo fronteque sæpius leviter depresso, mandibulis leviter sulcatis, menti dente mediocri; thorace rotundato-obcordato, basi quadrate truncato, 3-impresso, impressione media minus profunda in lineam subtilem ad apicem prolongata, inter impressionibus profunde punctata, antice leviter strigoso, dorso subtiliter transversim ruguloso; elytris striatis, ad striam 2m medio distinctius puncto impresso; prosterno sat fortiter canaliculato.

Prope Colombo in arenis subhumidis et nocte ad lumen communissimus.

46. Distrigus Dejeani. *N.*

D. piceo-niger, subtus sæpius rufo-piceus, nitidus, capite æneo-micante, pedibus, elytrorum margine antennisque rufo-piceis, palpis testaceis long. corp. vix. 2½ lin.

Capite inter antennas 2-impresso, fronte leviter excavato, mandibulis subtiliter sulculatis, mentum præcedentis; thorace robustiore, ut in præcedente sculpto et signato sed antice non strigoso; elytris pedibusque præcedentis, illorum tamen puncto minus distincto; prosterno fere plano.

Cum præcedente communissime occurrit.

47. Drimostoma Ceylanicum. *N.*

D. nigro-piceum, nitidum, pedibus piceis, tarsis, antennis oreque, dilutioribus, palpis testaceis, long. corp. 2¾—3 lin.

Capite ante oculos profunde 2-impresso, labro antice leviter emarginato, mandibulis elongatis, rectis, acutis, lævibus, menti dente sat acuminato, antennis art. 2-4 gradatim longioribus; * thorace obcordato, postice fortius angustato, quadrato, lævi, basi 2-impresso, lenea longitud. med. diviso, antice impressione semilunari (impressionibus his omnibus

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* In the *Distrigi* just described, joints 3 and 4 are sub-equal.

profundioribus); elytris striatis, interstitiis parum elevatis; prosterno sat fortiter longitud. impresso.

In prov. occid. non frequenter occurrit.

48. Casnonia punctata. *N.*

C. supra subtusque (occipite abdomineque exceptis) dense profundeque punctata, brunneo-picea, elytrorum margine maculisque 2 apicalibus longitudinalique cum margine confluentibus brunneo-testaceis, pedibus flavis, trochanteribus, geniculis tarsisque obscurioribus, ore dilute brunneo, antennarum art. 1° palporumque art. 2 basalibus flavis; long. corp. 3 lin.

Specimina nonnulla mens. Decemb. prope Colombo nocte ad lumen cepi.

Smaller than the *Ophionea cyanocephala.* The head is robust, with two impressions between the antennæ and a third just above them, somewhat of the shape of an inverted V. Occiput less narrowed than in *O. cyanoceph.*, smooth. The anterior part of the head deeply punctured. The labrum is lightly produced in the middle. Thorax much plumper than in *O. cyanoceph.*, hardly as long as the head, not much narrower, conic, considerably narrowed and cylindric at the base, densely and deeply punctured, especially at the base. Elytra with the shoulders straighter than in *O. cyanoceph.*, impressed with rows of deep punctures growing smaller and shallower towards the apex, with a few small hairs near the latter part; in the third and fifth interstice three setigerous punctures, in the third and fourth interstice a longitudinal apical macula of yellowish color flowing together with the margin which is of the same color, two shallow impressions on either side, one below the shoulders, the other near the apex. Legs shorter than in *O. cyanoceph.*

49. Casnonia pilifera. *N.*

C. glabearima, nitidissimi (quasi lacca obducta), pilis longis sparsis vestita, nigra, ore (labro excepto) antennisque brunneis, his apicem versus dilutioribus, elytris maculis 2 subapicalibus argenteis, pedibus piceis, femoribus basi albis, trochanteribus obscurioribus, tibiis tarsisque brunnescentibus; long. corp. 3¾ lin.

Specimina nonnulla cum præcedente cepi.

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This elegant species is of the same size as the *O. cyanocephala*, but, with the exception of the elytra and abdomen, which are shorter and plumper, still more slender and graceful. Head large, very narrow and prolonged behind, much more so than in *O. cyanocephala*, with two large shallow impressions between the antennæ, and another small one just above them. Occiput slightly transversely rugose. Thorax very slender, half as broad as the head, of hardly the same length, obconic, constricted below the apex, then gradually increasing in size to below the middle, the base abruptly narrowed, cylindric and impressed with three deep annuliform wrinkles. Elytra about as long as thorax and occiput together, increasing very sensibly in breadth to below the middle. The apex is much more obliquely cut away than in *O. cyanocephala* or the preceding species. The shoulders are full and hide the margin. Just below them the elytra are deeply excavated; showing, moreover, three deep longitudinal impressions in the bottom of either excavation and a slight yellowish spot, hardly to be distinguished, at the outer part of it. A round spot of silvery appearance adorns the hind part of either elytron. There are two rows of long thin hairs, placed at considerable distances from each other, on the back of either elytron and a third just within the margin; the same thin hairs are scattered about the thorax, femora, and elsewhere. The legs are longer and more slender than in *O. cyanocephala*.

The *Ophionia cyanocephala* is not scarce in this part of the Island. It affects rather damp, grassy localities, where it mounts upon the stalks of the plants, as Helfer has observed of some species in Bengal, but quite different from the observations Lacordaire has made with regard to the American species of the genus. However, it is much more frequently taken about the light at night. The two species just described are much scarcer. Mr. C. A. Dohrn of Stettin writes to me that he has received another species from me (*Cypris D.*) which, however, I do not recollect. It would appear to be smaller than either of the former, black, with white tips to the antennæ.

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VI. SYMPHYUS, *n. g.* *N.*
Fam. CARABIDÆ.
Trib. FERONIDÆ.

Corpus robustum oblongo-ovatum, subdepressum. Caput mediocre postice haud angustatum, oculis mediocribus, sat prominulis, globosis. Mentum semicirculare profunde emarginatum, dente forti spiniformi, lobis haud breviore, ligulæ cannato (hinc *n. g. Symphyus*), profunde excavato. Ligula subcoriacea inverte trigona, dorso elevato, paraglossis magnis connatis, eam sat longe superantibus, apice cylindricis. Palpi art. 4° ovato, apice truncato; maxillares art. 3° elongato. Labrum parvum profunde angulate emarginatum. Mandibulæ validissimæ, subtrigonæ, porrectæ, una 1-, altera 2-dentata. Antennæ filiformes, humeros parum superantibus, art. 1° mediocri, 2° parvo, 3° sequenti paulo minore, 4-11 subæqualibus, 5-11 depressis. Thorax subquadrato-cordatus lateribus rotundatus, basi angustatus, quadratus, angulis posticis leviter oblique truncatis. Elytra ovata, parallela, apice rotundata et leviter utrinque sinuata. Pedes mediocres, tibiis ant. leviter dilatatis, profunde emarginatis; intermed. fortiter spinosis; tarsi art. 1° cylindrico-trigono, 2-3 trigonis, 4° obcordato, unguiculis simplicibus. (Mas latet).

50. SYMPHYUS UNICOLOR. *N.*

S. niger, nitidus, glaber, pedibus oreque piceis, long. corp. 8½ lin. lat. 3 lin.

Capite inter antennas 2-foveolato, mandibulis sulcatis; thorace antice haud, postice vix emarginato, hic 2-impresso, linea longitud. media diviso, ad marginem posteriorem longitud.—, dorso subtiliter transversim ruguloso; scutello leviter excavato; elytris striatis, in striis punctatis, interstitiis vix elevatis, cum thorace anguste marginatis.

Specimen singulum f. prope Colombo mens. Decembr. nocte ad lumen cepi.

This description is made from a single female individual, but I have little doubt that the insect belongs to the numerous tribe to which I have referred it; in which it ought perhaps to be placed near *Eccoptogenius Chaud.* I am, however, not sure whether the shape of its ligula does not entitle it to a place amongst the *Anchonoderidæ.* I may add to the above description that the accessory stria of the elytra is present, but that the puncture usually found upon the third interstice is wanting. The general appearance of the insect presents nothing whatever particular. However, upon further inspection

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the deeply notched labrum and the strong porrected mandibles are very striking. The labrum appears to me of extraordinary construction; the mentum is large and of semicircular shape, deeply emarginated, which renders the lobes heavy, rounded outside, and pointed at the tip. In the bottom of this emargination stands a pointed, spinelike tooth, as long as the lobes. This tooth is deeply excavated or grooved and is clearly seen to be to its full length soldered together with the basal part of the ligula. Probably the entire mentum is in this manner connected with the adjoining part of the ligula; but in the other parts it is not so clearly observable as in the tooth, and I have not dissected the labrum. The ligula itself is of a leathery consistence, of the shape of an elongated inverted triangle with an elevated back, the anterior margin is straight and somewhat prolonged beyond what would be the sides of the triangle. The paraglossæ are of membranaceous texture, very broad, adhering to the sides of the ligula to its full length, taking then a slender, cylindric form and reaching considerably beyond it, being at the same time slightly bent inwards.

VII. CALODROMUS, *n. g.* N.
Fam. CARABIDÆ.
Trib. HARPALIDÆ.

Corpus robustum, ovatum, subconvexum. Caput mediocre subquadratum, postice haud angustatum; oculis minoribus sat prominulis. Mentum profundius sublunate emarginatum, edentatum, lobis obtusis. Ligula oblonge quadrata, apicem versus dilatata, apice medio leviter producta, libera, paraglossis robustis eam parum superantibus, apice obtusis. Palpi art. 4° elliptico, apice leviter truncato. Labrum subtransversum, antice emarginatum, angulis rotundatis. Mandibulæ validæ, una 1-, altera 2-dentata. Antennæ robustæ, thoracis basin attingentes, art. 1, 3, 11 et 4-10 inter se subæqualibus, 1-2 cylindricis, 3° basi angustato, 4-11 ovatis, leviter depressis. Thorax transversus, lateribus leviter rotundatus, basi parum angustatus, quadratus, antice leviter emarginatus. Elytra thorace parum latiora, apice rotundata. Pedes robusti, ant. tibiis apice leviter dilatatis, profunde emarginatis, tarsis art. 1-4 gradatim minoribus, 1° subtrigono, 2-4 transversim trigonis, unguiculis validis, simplicibus, *mas* art. 1-4 leviter dilatatis, subtus squamulis 2-seriatim munitis; pedes intermed. et post. tibiis fortiter spinosis, tarsis simplicibus.

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51. Calodromus exornatus. *N.*

C. glaber, nitidus, supralæte viridis, thoracis margine lat‑ ‑lytrorumque fascia inframarginali testaceis, capite viridi-brunneo, antice brunneo, scutello cum sutura brunneis, subtus brunneus, pedibus testaceis; long. corp. 4⅓—4½ lin.

Capite inter antennas 2-impresso, thorace capite quartâ parte-, longitudine duplo latiore, basi 2-impresso, leviter rugoso-punctato, linea longitud. media diviso, cum elytris anguste marginatis; his profunde striatis.

Specimina nonnulla mens. Nov. et Decemb. prope Colombo nocte ad lumen cepi.

Very pretty insects apparently closely allied to the African genus *Bradybœnus Dej.* from which, however, they differ in the structure of the ligula and in other minor points. They are quite of the shape of a *Harpalus*, and I have no doubt that their habits are those of the latter. Joints 4—11 of the antennæ have very much the appearance of grains of rice strung together. The metallic green color with which the insect is adorned on the back is very rich; on the elytra it forms a pattern of two triangles with their tips down, that of the upper one being immersed in the base of the lower one, and the apex of the latter being divided. These triangles are flanked on either side by a broad longitudinal belt of yellowish color. The margin is again green with the exception of the apex which is occupied by the yellowish belt. The thorax is green in the centre and yellowish along the sides. The head is more or less brownish-green, lighter in the middle; the mouth is brown.

52. Zophium pubescens. *N.*

Z. rufo-testaceum, oculis nigris, occipite nigrescente, elytris pubescentibus fuscis maculis 2 subhumeralibus, 1 apicali communi testaceis ornatis; long. corp. 3¾ lin.

Antennis art. 1° capitis vix longitudine; labro integro; palpis art. ultimo trigono; menti dente magno obtuso, profunde canaliculato; thorace elongato-cordato, capitis latitudine, illo parum-, latitudine duplo longiore, medio leviter longitudinaliter depresso; elytris subtilissime dense pubescentibus, obsolete striato-impressis, humeris obsoletis.

Specimina nonulla in prov. occid. nocte ad lumen cepi.

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This description does not quite agree with Lacordaire's diagnosis of the genus *Zophium*. The labrum, the tooth of the mentum are not what they ought to be according to this author. However, Schmidt-Gœbel in his "Col. Birm." has already departed from Lacordaire's formula by describing six species of *Zophia* with an entire mentum-tooth, which, according to the former author, would make them *Polystichi* rather. The fact is, that this part of the labrum appears to be variable. In all other respects the insect agrees with Lacordaire's description of the genus.

The labrum is entire; the first antennal joint is hardly as long as the head, slightly curved and increasing in thickness towards the tip, the second joint is very small and rounded, the rest are subequal, filiform; the tooth of the mentum is very large, almost equalling the lobes, entire and deeply grooved at the apex; the maxill. palpi are porrected, the second joint is as long as the two following together, the fourth, in both the maxill. and labial ones, is triangular or slightly securiform, being obliquely truncated at the tip; the thorax is elongated cordiform, truncated at the base, the back is elevated, divided down the middle by an impression, the commencement of the elevation forms two knobs at the base; the first tarsal joint is as long as the three following together.

Amongst the 300 species of Bembidiidæ which have been described from almost all parts of the world, with the exception of Australia, it would appear there are also none from Southern Asia. However, since the publication of Lacordaire's "G. d. Col." (1854), in which this statement occurs, various species must have found their way into the Prussian cabinets with my collections from Bengal and this Island.

In the former country the *Carabidæ* are very abundantly represented, and I recollect with pleasure the great variety of them, from the gigantic *Anthia* down to the smallest *Bembidium*, the banks and the sands of the Ganges used to furnish me when leisurely travelling upon this river some years ago,

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from August to October, just after the rains. Nowhere have I seen, nor do I expect to see, such swarms of *Cicindelæ.* Their buzzing flight when disturbed was heard like that of bees. It appeared to me that they did not quit the sands, their favourite haunts, when the tide rose, but allowed themselves to be covered over by the water, as other semiaquatic beetles do. Without especially hunting for them, I brought away with me some ten species, mostly new, and amongst the rest of the *Carabidæ* as many *Bembidia.*

In this Island, both in the hills and the plains, there is not a bank of a pond, lake or river, which has not, as in more northern latitudes, its *Bembidia*, and, contrary to what one would expect, they appear to be more common in the hot low country than in the cool hill region.

The majority of the species described below may any day be found upon the banks of the Colombo lake. None of the species, (which, as I said, must have found their way with my collections to Berlin and Stettin, and thence perhaps elsewhere,) have, to my knowledge, been described. The descriptions given below, must, therefore, I am fain to believe, be an interesting addition to the literature of this section of the *Carabidæ*, however inferior they may be to what they might have been had they been produced in Europe had the insects been collated with allied typical species. I have none of those typical representatives of the genus at hand nor is my recollection of them sufficiently distinct to permit of my drawing comparisons between them and the Ceylon insects now before me. Nevertheless, I hope I have set forth the peculiarities of my species with sufficient precision to distinguish them from, or identify them with, any other Cis-Himalayan species that may hereafter be described. As hopeless confusion appears to exist amongst the sub-genera, into which the original genus has been broken up, I have not attempted to refer my species to any of them, for fear of thereby doing anything but throwing additional light on the subject. There is no doubt that many more species exist in this Island, and that indeed, as in the case of the *Sta-*

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phylinidæ, they will eventually be found to be quite as abundantly represented within the tropics as without. Nothing but their smallness has hitherto prevented their discovery.

53. Bembidium opulentum. *N.*

B. oblongum, subconvexum, nebuloso-æneum purpureo-micans, elytris apice sordide testaceis, subtus nigro-piceum, pedibus antennarumque basi testaceis, ore brunneo; long. corp. 1¾—2 lin.

Capite inter oculos 2-sulcato, oculis magnis prominulis, labro fortiter transverso, brevi, integro, mandibulis porrectis, antennis art. 2° sequentibus parum breviore; thorace transversim cordato antice posticeque truncato, haud emarginato, depresso, margine basique elevato, medio capite parum latiore, apicem versus modice—, basin versus fortius abrupteque angustato, angulis basalibus fortiter truncatis profundeque foveolatis, linea longitud. media abbreviata diviso; elytris ovatis humeris obsoletis, profunde striate punctatis, punctis apicem versus obsoletis, ante et infra medio utrinque foveolatis, apice lunula magna sordide testacea. Mas latet.

Prope Negombo in ripis Maha-Oyæ, fluvii, specimina nonnulla cepi.

The insect is of bronze color, a purple reflect appearing on the back in irregular patches as the light may fall upon it. The palpi and the base of the antennæ are of yellowish color, the apex of the third joint of the maxill. palpi, however, as well as that of the second, third and fourth antennal joint is brown, of which color is also the remaining part of the antennæ. The second antennal joint is the shortest, the third and fourth are rather longer than the following. The mandibles are rather straight and porrected. The sides of the thorax are almost angular and furnished with a setigerous puncture at the broadest part, that is, just before the middle. There are seven distinct rows of punctures on either elytron and an accessory one along the side of the scutellum, the rows decreasing in length towards the margin and the punctures in depth towards the apex, the first row on either side; changing however, before the apex into a furrow which falls in with that which sepaates the margin from the rest of the elytron. Before and beyond the middle, in the region of the third row of punctures, is an excavation containing a puncture which is situated upon the third interstice. The excavation nearest the base is the deepest. The apex of the elytra is marked with a spot of

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dirty yellowish color prolonged on either, side along the margin, which is here rather broad.

If my memory serves me right, the insect resembles the *Tachypus flavipes*.

54. Bembidium truncatum. *N.*

B. oblongum, valde depressum, brunneo-testaceum, oculis nigris, pedibus, antennis palpisque pallide testaceis; long. corp. 1½ lin.

Capite magno, thorace quartâ parte prope minore, inter antennas 2-foveolato, oculis mediocribus, antennis art. 3° reliquis minore, 4-11 subæqualibus fortius ovatis; thorace breviter cordato, antice posticeque truncato, haud emarginato, basi subquadrato parum prolongato, foveis basalibus obsoletis sed linea basali latitud. profunda lineaque longitud. med. distinctis; elytris oblongis apice *transversim truncatis*, juxta suturam utrinque obsolete 1-striatis, ante et infra med. puncto impressis.

In prov. occid. rarius.

The small size, large head and truncated elytra effectually distinguish this species. The truncated posterior angles of the thorax and the general appearance induce me to consider it allied to the preceding species, at all events to approach nearer to it than to any of the following species. The eyes are rather small for this genus. There are no traces of striæ on the elytra with the exception of one indistinct one along the suture.

55. Bembidium tropicum. *N.*

B. oblongum, depressum, brunneo-testaceum capite brunneo, elytris dorso nigris cyaneo-micantibus, pedibus, antennis palpisque testaceis; long. corp. 1½ lin.

Capite inter oculos 2-fovelato- sulcato, oculis mediocribus, antennis fortius filiformibus art. 3° reliquis breviore; thorace breviter transversim cordato antice posticeque truncato, haud emarginato, basi subquadrato angulis basalibus elevatis sed haud foveolatis, linea latitud. basali profunda, infra lineam strigoso, linea media longit. diviso; elytris oblongo-ovatis utrinque juxta suturam 4-striatis, striis externis et his apicem versus obsoletis, in striis punctatis, infra marginem stria profunda abbreviata, ante medium et apicem in interstitio 4° puncto magno impressis, punctis anteapicalibus piliferis in sulcum ad apicem prolongatis semicirculum formantibus; tarsis 4 anterioribus art. 4° subtus apice spinis squamulaccis 2 instructo.

In prov. occid. copiosum.

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Of light brown color, the head darker, the elytra blackish on the back with a slight blue reflect, the base, sides and apex brownish; the colors being more or less washed into each other no distinct pattern is observable. The brown spot of the apex, however, is generally pretty clearly set off from the adjoining dark part. The paraglossæ are hardly longer than the ligula which itself is rather large. The antennæ are rather hairy and strongly filiform, (not, as in most other species, increasing in thickness towards the apex, the joints growing at the same time more and more oval); joint 3 is the shortest, 2 and 4 are rather longer than the other. The back is impressed with three to four distinct striæ on either side of the suture, the external ones being obsolete as are also the remaining ones towards the apex. There is an additional deep stria within the marginal one, extending from the middle to the apex. Before the middle, and before the apex, there is a puncture situated upon the fourth interstice; the anteapical one of these has a hair in the centre and is prolonged to the apical angle in the shape of a deep, curved furrow. This being the case on either side, the two furrows together form a semicircular figure The tarsi are each furnished with bristles, especially at the lower margin of the apex of the joints. In the four anterior tarsi joint 4 is furnished at that place with two long bristles the apex of which fits in at the base of the claws. These bristles partake somewhat of the nature of squamulæ by being dilated in the shape of a lancet. I have noticed them occasionally to be bifid at the apex, but I do not think that they are so always.

56. Bembidium triangulare. *N.*

B oblongum, depressum, testaceum, capite brunneo, elytris sutura fasciaque lata transversali media nigris pedibus, palpis antennisque pallide testaceis his medio fuscescentibus; long. corp. 1. lin.

Præcedenti affine, ejus capite, thorace et tarsis, differt thorace linea basali punctata, infra lineam vix strigoso; elytris utrinque profunde 6-punctato-striatis, striis apicem marginemque versus sensim obsoletis, ante medium in stria 4ª puncto impresso, stria inframarginali abbreviata et impressione semicirculari apicali ut in præcedente.

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Variat colore obscuriore. In prov. occid. communissimum.

Very closely allied to the preceding species; easily distinguished however by size, color—which is generally lighter than that of the former,—and the deeply striated elytra. The insect is, moreover, more common than the former. The prevailing color of the elytra is not, as in the preceding species, black, but it is that of the rest of the body, yellowish, with merely a black suture and black belt across the middle; the edges of this belt are washed together with the color of the adjoining parts. The semicircular impression at the apex of the elytra is the same as in the former, and forms with the abbreviated inframarginal stria, (which is also the same,) a triangular figure, tip down, base open, whence I have derived the name. The head with the antennæ, tarsi, etc, are those of the former, as I have said above.

57. Bembidium Ceylanicum. *N.*

B. oblongum, depressum, testaceum, oculis nigris, elytris sæpissime fascia media transversali fusca obsoletissima, pedibus, palpis antennisque pallide testaceis; long. corp. ¾ lin.

Præcedenti simile, ejus capite, thorace et tarsis, facillime tamen distinguendum antennis apicem versus incrassatis articulis magis magisque ovatis, art. 2° sequente longiore, 3-4 subæqualibus subcylindricis, reliquis ovatis; thorace, linea basali fortiter punctata excepta, basi lævi; elytris utrinque juxta suturam leviter 3-punctato-striatis, striis reliquis et his basi apiceque sensim obsoletis, ante et infra medium ad striam 3ª puncto pilifero impressis, impressione semicirculari apicali ut in præcedente sed stria inframarginali non abbreviata.

In prov. occid. communissimum.

Easily distinguished from the former, to which it is allied, by size, color and the incrassated antennæ. The elytra, moreover, shew only three distinct striæ on either side of the suture, two more, however, being just traceable. They are obsolete at the base, apex and towards the margin. Within the latter there is an additional deep stria, entire, and not, as in the preceding two species, only from the middle to the apex. The semicircular impression of the apex, however, is the same, so are the tarsi, etc.

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58. Bembidium Klugii. N.

B. ovatum, convexum, æneum, elytris maculis 2 subapicalibus ruso-flavis, subtus piceum, pedibus dilutioribus, tibiis, tarsis antennarumque basi testaceis; long. corp. 1½ lin.

Capite inter oculos longitud. 2-impresso, oculis maximis, antennis art. 2° sequentibus parum breviore, his subæqualibus; thorace transversim ovato, antice posticeque truncato, haud emarginato, basi abrupte angustato quadrato, angulis basalibus profunde foveolatis inter foveis punctis 1-seriatim impresso, linea media longit. subtili diviso; elytris ovatis apicem versus leviter angustatis, utrinque profunde 7-punctato-striatis, basi lævi, striis apicem versus obsoletis, ante apicem inter strias 3-6 macula orbiculari rufo-flava apiceque impressione semicirculari.

In prov. occid. et central., hic usque alt. 3500 ped., non infrequenter legi.

This species ascends from the sea level of the Western Province to an elevation of 3,500 feet in the hills, where I have not unfrequently met it upon the sandy banks of the Pundalu-Oya, a rocky mountain-stream in the district of Kotmalé. Its robust, ovate, convex shape places it at once in a different division from any of the former. It is of bronze color with two orange colored spots behind, the mouth is brown with the exception of the palpi, which, together with joints 1 and 2 of the antennæ, are yellowish, joint 3 of the maxill. palpi, however, is of the general color of the mouth. The labrum is square and entire, the second antennal joint is rather shorter than the rest. The thorax is transversely ovate, that is to say, its greatest width is at the middle, not as in a cordate thorax, before it, the foveæ are connected by a series of punctures which gradually deepen towards the centre, the longitud. divisional line is also deeper at the apical extremity than at the other parts. The elytra are impressed with seven deep furrows on either side deeply punctured at the bottom. These furrows decrease in length towards the margin and in depth towards the apex, with the exception, however, of the first on either side, which go straight down to the apex. At the latter comparatively smooth place is the semicircular impression noticed in the three preceding, and to be noticed in all the following species. The base of the elytra is smooth. There,

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are no traces of punctures, such as are usual in the region of the third or fourth interstice, observable. The lower side of the insect is of pitch color, the basal part of the legs and the thighs are lighter and the tibiæ and tarsi quite light.

59. Bembidium ebeninum. *N.*

B. ovatum, convexum, nigrum elytris ante apicem maculis 2 rufo-flavis, subtus piceum, pedibus palpis antennisque testaceis, his apicem versus obscurioribus, reliquis oris partibus brunneis; long. corp. 1½ lin.

Præcedenti affine, ejus capite et thorace, facillime tamen distinguendum præter colorem antennis fortius filiformibus, elytris lævibus juxta suturam utrinque 2-striatis, striis basi abbreviatis, externa apicem versus obsoleta, ante et infra medium leviter foveolatis, ante apicem macula ovata rufo-flava, infra marginem stria profunda apiceque semicirculariter impressis.

In prov. occid. non rarum.

Very closely allied to the former and equally pretty. Head and thorax entirely those of the former, the antennæ, however, are more filiform and the divisional line of the thorax is not deepened at the apical extremity. The elytra are smooth, with only two striæ along the suture on either side, the rest not being even traceable. Both these striæ are abbreviated at the base and the outer one becomes obsolete towards the apex; the inner one, however, goes fully down to the apex, and falls in with a deep inframarginal furrow which is wanting in the preceding species. Before and beyond the middle is a small impression, before the apex are two oval spots of orange color; the apex has the semicircular impression noticed in the preceding species.

60. Bembidium Orientale. *N.*

B. fortiter ovatum, convexum, æneum elytris maculis 4 magnis flavis apice sordide subtestaceis subtus piceum abdomine brunneo, pedibus, antennarum basi palpisque pallide testaceis; long. corp. 1¼ lin.

Capite inter oculos longitud. 2-impresso, oculis maximis, antennis, art. 3-4 subæqualibus, 2° his vix breviore; thorace transverso leviter ovato, antice posticeque truncato, haud emarginato, leviter angustato, basi quadrato, 2-foveolato, inter foveis punctis 1-seriatim impressis, linea longit. media diviso; elytris ovatis apicem versus fortius angustatis, utrinque profunde 7-striatis, basi lævi, striis marginem apicemque versus

magis magisque obsoletis, in stria 3ª ante et infra medium puncto impressis, infra humeros inter striam 5ᵐ et marginem macula ovata, ante apicem inter striam 2ᵐ et marginem macula obliqua flava, apice sordide obsoleteque testaceis, hic semicircalariter et infra marginem stria profunda impressis.

In prov. occid. commune.

Easily distinguished by its strongly oval shape, the thorax being hardly contracted at the base and no doubt belonging to a different sub-genus from the preceding and the following. The head is quite that of *B. Klugii*. The antennæ have the second joint hardly shorter than the third and this and the following subequal, joints 1-4, are of light yellowish, the rest of brown color, joint 3 of the maxill. palpi is of dark, the remaining ones and the labial palpi of pale yellowish, color. The labrum is square, entire, and, with the rest of the mouth, brown. The mandibles are furnished with 3-4 small teeth below the middle. The ligula is broader than in any of the other species. The thorax, besides in shape, is distinguished by having the foveæ removed from the basal angles towards the centre. The elytra are impressed with seven distinct striæ on either side, the first of which runs down to the apex where it falls in with the inframarginal one, the rest decrease in length towards the margin and in depth towards the apex, beyond the seventh another one is just traceable, beyond this there is a deep inframarginal one. The apex is impressed with the semicircular figure which distinguishes all the species here enumerated, with the exception of *B. opulentum* and *truncatum*. The color of the insect is a dark bright metallic green variegated with four large yellow spots on the elytra; two of these are near the shoulder and of oval shape, the other two near the apex and oblique; the apex is of a dirty yellowish color. The lower part of the insect is of pitch color, lighter towards the apex, the legs are yellowish, darker towards the base.

61. BEMBIDIUM EMARGINATUM. *N.*

B. ovatum, convexum, piceum, capite dilutiore, elytris ante apicem maculis 2 rufo-flavis, subtus brunneum, pedibus, antennarum basi palpisque testaceis; long. corp. 1 lin.

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Capite antice fortius acuminato, fronte utrinque profunde pluries sulcata, oculis mediocribus prominulis, *labro profunde subangulate emarginato*, antennis art. longitudine subæquali; thorace breviter cordato antice posticeque truncato, non emarginato, basi quadrato foveis basalibus lineaque longit. media fere obsoletis, linea basali latitud. tamen distincta; elytris ovatis juxta suturam utrinque 2-striatis, stria externa basi apiceque abbreviata, ante et infra medium puncto obsoleto impressis, ante apicem macula orbiculari rufo-flava apiceque sordide obsoleteque testaceis, hic semilunariter et infra marginem stria profunda impressis.

Variat colore dilutiore. In prov. occid. rarum.

This and the two remaining species are allied to each other, and probably belong to the subgenus *Lopha*. However, I am less sure of this with regard to the present species than with regard to the two following.

The head is pointed in front, and the labrum—an unusual occurrence—deeply notched. Two deep furrows run from the clypeus straight across the forehead to the vertex, and from their base other smaller ones radiate towards the eyes. Joints 2-5 of the antennæ, which, in almost all cases, are of unequal length, are not so in the present; the first two or three joints are yellowish, the rest are brown. Joint 3 of the maxill. palpi is dark, the remaining ones and the labial palpi yellowish. The elytra are impressed with two striæ on either side of the suture, the remaining ones are just traceable. The one next to the suture goes straight down to the apex, where it falls in with a deep inframarginal furrow; the second is as usual, abbreviated. The apex is impressed with the semicircular figure, and there are two punctures on either side.

62. Bembidium ornatum. *N.*

B. ovatum, subconvexum, brunneum, elytris maculis 4 flavis, pedibus, antennis palpisque pallide testaceis, long. corp. 1 lin.

Præcedenti simile, prætercolorem facillime tamen distinguendum corpore graciliore, fronte utrinque 2-sulcata, labro integro, elytris infra humeros et infra marginem utrinque macula orbiculari flava, punctis nullis.

Variat colore obscuriore et dilutiore et sæpius apice sordide testaceo. In prov. occid. commune.

Easily distinguish from the preceding species with which it agrees in all other respects; no striæ are, however, traceable

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upon the elytra between the two near the suture and the in-framarginal furrow.

63. Bembidium scydmænoides. N.

B. ovatum, convexum, obscure brunneum, elytris maculis 4 magis minusve obsoletis dilutioribus, pedibus, palpis antennarumque art. 2 primis testaceis, his apice reliquisque obscurioribus; long. corp. 1 lin.

Præcedenti simile, corpore robustiore, fortius ovato magisque convexo, thorace basi fortius quadrato facillime distinguendum.

In prov. occid. communissimum.

VIII. Megaristerus, *n. g.* *N.*
Fam. Carabidæ.
Trib. Harpalidæ.

Corpus oblongum, depressum, glabrum. Caput mediocre antice obtusum. Mentum profunde subquadrate emarginatum, edentatum, lobis extus rotundatis apice acuminatis. Ligula minima oblonga paraglossis magnis connatis eam totam amplectentibus antice rotundatis subcordate emarginatis. Palpi maxill. art. ultimo subcylindrico apice magis minusve angustato truncato, lab. eodem obovato truncato. Labrum transversum antice posticeque angustatum, margine anteriore profundius emarginato setoso. Clypeus emarginatus. Mandibulæ validæ trigonæ apice leviter arcuatæ, dextera mediocri labra obtecta apice acuminata medio 1-dentata, sinistra robustiore porrecta (hinc n. g. Megaristerus) apice obtusa medio 2-dentata. Antennæ humeros parum superantes, filiformes, art. 2° sequente parum breviore, reliquis subæqualibus. Thorax rotundato-cordatus, postice angustatus angulis rotundatis, antice leviter emarginatus angulis distinctis. Elytra parallela apice rotundata. Pedes ut in g. Acupalpo tarsis maris 4 ant. tamen 1° subtus nudo.

Victus Harpalorum.

Apparently closely allied to *Amblystomus*, differing, however, in the sculpture of the tarsi, the antennæ, labrum and palpi, and, as in the diagnosis given by Lacordaire in his *g. d. Col.* the paraglossæ of *Amblystomus* are simply said to be rounded in front, a further distinction would appear to reside in the notch which exists in that part of the paraglossæ of my genus *Megaristerus*. Also allied to *Acupalpus* the sculpture of the tarsi being exactly the same; in saying which I bear particularly in mind that the intermediate ones of the male are hardly dilated. From this genus however, it is effectually dis-

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tinguished by the shape of the ligula. From both *Amblystomus* and *Acupalpus*, the present genus moreover differs in the vesture of the four ant. tarsi of the male, *the first joint being naked below* and in the mandibles, the left one of which is much larger and plumper than the right one, protruding from under the labrum, whilst the latter is hidden by it, the former is at the same time obtuse at the apex whilst the latter is pointed. In the *M. Indicus* this peculiar construction is hardly striking, but in the other two species it is very noticeable, and imparts a curious appearance to the head of the insect.

64. MEGARISTERUS MANDIBULARIS. *N.*

M. piceo-niger leviter metallescens, subtus brunneus, antennis, tibiis tarsisque testaceis, ore brunneo; long. corp 1½-2 lin.

Capite inter antennas 2-foveolato, mandibula sinistra robustissima porrecta, dextera mediocri labro obtecta; thorace basi 2-foveolato, linea longitud. utrinque abbreviata media diviso, antice lunate impresso; scutello majore; elytris obsolete striatis, striis juxta suturam distinctioribus, cum thorace parce subtiliterque punctulatis, inter med et apic. ad striam 2m puncto impresso.

Prope Colombo rarus.

65. MEGARISTERUS STENOLOPHOIDES. *N.*

M. brunneo-piceus elytris obscurioribus metallescentibus maculis 4 flavis, margine suturæque apice brunneis, pedibus, antennarum basi palporumque apice pallide testaceis, ore, mandibulis brunneis exceptis, testaceo; long. corp. 1½ lin.

Præcedenti similis corpore robustiore minus depresso et colore facile tamen distinguendus. Differt præterea palpis max. art. 4o minus distincte, lab. eodem fortius truncato; thorace magis transverso basi obselete ruguloso; elytris profundius striatis, puncto ad striam 2m fere obsoleto, cum thorace haud punctulatis, maculis 4 subobliquis flavis: 2 humeralibus in interstitiis 5-6, 2 subapicalibus in interstitiis 3-4.

Prope Colombo rarus.

66. MEGARISTERUS INDICUS. *N.*

M. obscure viridi-æneus elytris maculis 2 humeralibus obliquis pustulisque 2 subapicalibus flavis, subtus brunneus tibiis tarsisque testaceis, antennarum basi oreque brunneo-testaceis; long. corp. 1½ lin.

Differt a M. mandibulari mandibula sinistra altera vix robustiore, elytris infra humeros inter marginem et striam 2m macula obliqua intus

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angustata ante apicem in interstitio 3° postula parva flavis, apice fortius quam in præcedente rotundatis.

Prope Colombo mihi, Maderaspatani a Dam. Hon. W. Elliott specimina nonnulla nocte ad lumen capta.

IX. Spathinus, *n. g.* N.
Fam. Carabidæ.
Trib. Pogonidæ.

Corpus obovatum, sub-convexum, glabrum. Caput mediocre antice trigonum, oculis magnis semiglobosis prominulis, collo brevi. Mentum transversum profunde quadrate emarginatum, dente sat forti acuto, lobis intus inter med. et apicem leviter oblique truncatis, extus rotundatis, apice acuminatis. Ligula minuta elongata, paraglossis latis connatis eam haud multo superantibus apice intus oblique truncatis subacuminatis. Palpi art. ultimo conico acuminato, max. art. 3° inverto ultimo æquali, lab. eodum robustiore. Labrum quadratum antice profunde emarginatum angulis ant. rotundatis. Mandibulæ porrectæ trigonæ apice acuminatæ basi dentatæ. Antennæ sat robustæ humeros parum superantes art. 2-3 subæqualibus, obovatis. Thorax transverse subquadratus antice lateribus leviter rotundatus, angulis subrectis. Elytra ovata apice rotundata. Pedes anteriores tibiis profunde emarginatis, tarsis moris art. 1-3 leviter dilatatis subtus squemulis munitis, art. 1° subcylindrico 2-3 subrotondatis, 4° subtrigono, unguiculis simplicibus.

Victus Bembidiorum.

Apparently closely allied to *Trechus* and an aberrant form of the same tribe to which the latter genus belongs. The mentum and palpi appear to agree entirely. The insects differ, however, in the structure of the ligula (which in *Spathinus* is entirely that of a *Bembidium*), and the sculpture and vesture of the ant. male tarsi. In spite of the latter anomalies, the preeminently characteristic shape of the palpi convinces me that the insect must find a place where I have put it. It is also closely allied to my genus *Ochthephilus*, differing from it, however, in the ligula, palpi and labrum. The generic name "*Spathinus*" signifies 'a staggard,' and I have chosen it with regard to the shape of the terminal joint of the palpi. The insects are common throughout the South-West and West of the Island, where they live in the manner of the *Bembidia*, under decaying vegetable matter, upon the banks of lakes, and rivers, &c.

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67. SPATHINUS NIGRICEPS. *N.*

S. Alatus, tenuiter hirsutus, brunneo-testaceus, capite nigro, elytris apice fuscis, ore, antennis pedibusque testaceis ; long. corp. 1½ lin.

Capite inter antennas profundius 2-foveolatus, fronte medio leviter depressâ ; thorace lævi linea longit. media diviso ; elytris juxta suturam obsolete striatis.

68. EUPLYNES DOHRNII. *N.*

E. ovatus, subconvexus, rufo-testaceus, oculis nigris, elytris viridibus, femoribus apice tarsisque geniculis fuscescentibus ; long. corp. vix 4½ lin.

Capite inter antennas bifoveolato ; antennis art. 2° brevi, reliquis subæqualibus ; palpis art. ultimo sub-elliptico truncato, labialibus elongatis ; thorace breviter transversim cordato antice posticeque truncato, longitudine sesqui latiore, depresso, lateribus basique elevato, hic leviter bifoveolato, angulis basalibus subrectis leviter rotundatis, linea med. ongitud. diviso, subtiliter transversim ruguloso ; elytris ovatis leviter dilatatis thorace duplo fere latioribus, striatis, in regione basali in stria 3ª, ad et infra medium in stria 2ª puncto impressis, in regione media utrinque depressis ante apicem leviter angustatis et sinuatis, apice levissemi transversim truncatis angulo interno in spinam producto ; pedibus tibiis fortiter tarsisque 4 posticis dorso modice costatis.

In campis silvisque prov. occid. et in montibus prov. central. usque alt. 4000 ped. sub vegetab. per occasionem copiose legi.

This insect frequents localities of a very different nature : I have taken it in great abundance in the Negombo district in hot, sandy, fields, under heaps of weeds, &c.; but I have also taken it on the banks of the Colombo lake, and in the damp forests of Pusselláwá, 4,000 feet above the sea, under fallen trees. Its favourite haunt, however, appears to be the former description of locality. It would appear to be very distinct from the *E. Cyanipennis* described by Schmidt-Gœbel in his "Col. Birm." in thorax, sculpture of apical part, and position of punctures of elytra, costated four post. tarsi, &c. On the other hand the curious depression of the elytra, which has much the appearance of being accidental, is the same. It occurs also in my genus *Anchista.* I am not quite satisfied with the description of the ligula and tarsi as given by Schmidt-Gœbel. The former I should call "truncated at the apex, anterior

angles strongly rounded off." In the insect before me it is certainly not rounded in the middle : if anything, it is rather the contrary. The tarsi I should describe thus :—"Joints 1—4 of two ant. male tarsi dilated ; joint 1 nearly as long as the two following together, sub-cylindric ; joint 2 nearly as long again as the following, elongate-trigone ; joint 3 sub-trigone ; joint 4 (in all tarsi) bilobed ; joints 1-3 furnished below with two series of lamellated papillæ fenced in by bristles; joint 4 densely penicillated; claws simple."

I take this opportunity to add a general remark. The author above quoted at the end of the description of his *E. Cyanipennis*, quotes a passage from Helfer's Burmese Journal, implying that the species lived exclusively upon trees, and *that most of the Carabidæ of that country had the same habit.* The latter part of this observation I feel inclined to look upon as a rash and unjustifiable assertion on the part of Helfer. There can be little doubt (and the above is an additional example) that the *Carabidæ* of this Island have much resemblance to those of Burma. Still my long experience in it has not furnished me with any instances of any of them living *upon trees*, with the exception of the *Tricondylæ*, *Collyres* and certain *Cicindelæ*. The *Casnoniæ* and *Ophioneæ* are in the habit of ascending grasses and low herbs, and certain *Lebiidæ* and genus *Catascopus* live under the bark of trees. This is all As to the insect described above, although it appears to adapt itself with facility to a variety of physical circumstances, and although it takes occasionally to its wings and flies into houses in the evening, I have never found it *upon trees.*

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NEW AND LITTLE KNOWN SPECIES OF CEYLON NUDIBRANCHIATE MOLLUSCS, AND ZOOPHYTES.

By E. F. Kelaart, M.D., Staff Surgeon, F. L. S.

Having, in the course of my Military service, been now for the third time stationed in Trincomalie, in Medical charge of the European Troops in that Garrison, and still finding that there is nothing like the careful study of God's works to divert the mind from the contemplation of diseased organic bodies, especially in this unhealthy and monotonous station; I have again resumed the researches of my leisure hours, which never fail to draw from me an earnest prayer that my health may be spared long enough to conclude these labours in this and other parts of the Island.

A recent visit to England made me acquainted with the value of the aquarium, and with the interesting researches of Messrs. Alder and Handcock, of Gosse, Johnson, and others, among the soft, gelatinous, marine animals found in European seas, which have been so much neglected by Indian Naturalists, owing to the difficulty either of observing their natural habits, or of preserving their forms. The curiosity thus excited was immediately increased, when, after several years absence, I was again in sight of the magnificent harbour and bays of Trincomalie. While some of my Ceylon friends contemplated my return to Trincomalie as a great evil, I became reconciled to my destination from an inward feeling—and I hope not an unworthy one—that I was again sent here, for a good and useful purpose.

It is now nearly two years since I returned to Ceylon, and I have every reason to feel thankful, that my residence in Trincomalie

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has enabled me to prosecute researches in more than one unexplored field of Natural History. I had for my guide the example of those great and good men, who deign to look upon even my labours as worthy of encouragement, and who do not consider the pursuit of the Naturalist as incompatible with the duties of a Military Surgeon. Dr. Johnson, himself a successful Medical practitioner and zealous Naturalist, (in his celebrated work on British *Zoophytes*,) observes, in his remarks on Doctors who are also Naturalists, that "that very activity of mind and perspicacity which originated and upheld their sagacity and success as practitioners, were sure to carry them far in whatever side-path the natural bent of their taste led them, for the occupation and entertainment of the leisure hours which the *busiest must have, or may create. Idleness has no leisure.* * * * There never was a time when it was necessary to vindicate, to any but the ignorant, the erratic excursions of medical men into the fields of science and literature; for assuredly the rank which the profession, as a body, has taken and holds in public estimation, depends for its patent, in part at least, on the scientific and literary character of its professors; and by continuing to support that character they will best secure it from the vulgarity of a common mercature, or the selfishness of a venal quackery."

My earliest researches, since my return to Ceylon, were directed (with the aid of the microscope) to those minute forms of animal and vegetable life called animalculæ, and *Diotomaceæ*. I have already communicated to another channel the observations I have made among these interesting microscopical creatures, found in fresh and sea water. In this paper, I propose to communicate to the Ceylon Branch of the Royal Asiatic Society, my researches among some of the least known, but most interesting, species of marine animals.

Finding that scarcely anything is known of the many naked Molluscs of this part of the Indian Ocean, I have availed myself of the present favorable opportunity offered by the Ceylon Government, for the investigation of the Natural History of the Pearl Oysters, to extend my researches also to a numerous family

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of *Mollusca* inhabiting these seas, which though not productive of pearly gems, or affording specimens for cabinet collections of Conchologists, or of amateur collectors, have attracted considerable attention in Europe, more especially since the publication of the splendid work of Alder and Handcock on the British *Nudibranchiata.*

The marine shells of Ceylon have long been known to the Naturalist, and they are also familiar to many in Ceylon, but the soft sea nymphs, or slugs, whose perishable charms often rival the more lasting beauties of the finest shell, had scarcely ever been noticed by any Naturalist or friend in the Island, till I had placed these creatures in the Vivarium. They have not only afforded amusement and instruction to myself, but, I hope, to others also, who have frequently seen these interesting creatures in their new homes. I must confess that some of my visitors were disappointed at the slimy nature of these animals, and failed to appreciate the beauty of many of my pet specimens. Others, however, more alive to the beautiful and to the wonderful works of God, did not despise the sea-born slugs, because they were so snail-like in appearance, and, like the land slugs, destitute of shells. Even the native shell divers, who procured me most of the living specimens, expressed their astonishment at the newly unfolded beauties of these "*Aḍḍai*,"* or slugs, which they found crawling on rocks and sea-weeds ; but it was not till the full formed *Doris*, or the sweet little *Eolis*, expanded their tentacles and plumose gills in the glass Vivarium, that these 'men who go down to the deep' became aware, that the creatures which they so much despise are among the most elegant objects of the sea, and that, although a shell will preserve its colour for an almost indefinite period, the rich and variegated colours of these semi-gelatinous creatures, though shorter lived, are not less charming, or less worthy of admiration. It may, therefore, be hoped, that the interest recently created will continue to be attached to the naked *Mollusca* of Ceylon, and, that, in a few years, they will be as well known to

* T அட்டை 'sea-slug.'

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the Naturalist as the European species. Although it may be long before we shall find an Alder or a Handcock to pourtray gracefully, and faithfully record their characters and habits, still it will always be gratifying for me to feel, that I was the pioneer to the labours of others more competent to do justice to the Ceylon *Nudibranchiata*.

It has always been my endeavour, (though, I must own, often unsuccessfully,) to describe in familiar language to my friends in Ceylon, the Natural History of animals found in the Island, and therefore, if I have not attained this object in the following pages, it will not be from the want of a wish to impart to others some of the pleasure I have derived in such congenial pursuits or from the absence of a desire to be amusing as well as instructive.

Popular accounts of the Natural History of a country generally follow a scientific one. But I shall endeavour to combine both in one communication, for I cannot but suppose that, among many inquirers, there will be found even a few who are anxious to dive deeper into the characters of an animal than its colour or form. Having this object in view, I cannot introduce the following descriptions of sea slugs, or sea nymphs, by a more intelligible and useful preface, than an abridged description of the Anatomy and Physiology of the Class *Nudibranchiata*, given in the English Cyclopædia ; promising, in the course of my own descriptive account of the species found in Trincomalie, to detail faithfully their habits and characters.

NUDIBRANCHIATA.

A family of *Gasteropodous Mollusca*. characterised by the possession of distinct, external and uncovered gills. The species of the family are all marine, and with few exceptions small in size. They are sometimes, with other forms of animals, called sea-slugs, arising from the fact that, like land slugs, they are destitute of shells. Their body is usually elongated and soft, and attached throughout its whole length to the foot, or disc, upon which they crawl. They are not unfrequently covered with a cloak, which in some is strengthened with calcareous spicula. The head is anterior, and frequently indistinct, having one or two pairs of tentacles, the upper pair of which are placed on the cloak when it is present.

and behind them the eyes are situated. But the characteristic peculiarity of these Molluscs is the appendages that constitute their breathing organs, placed upon the back, always symmetrically, in plumes, tufts or papillæ, either forming a circle on the central line, or arranged in rows upon the sides.

None of the Nudibranchiate *Mollusca* appear to have been known to the ancients, and even up to the time of Linnæus they remained, with one or two rare exceptions, entirely unnoticed. It was not until the appearance of the celebrated "*Memoires*" of Cuvier, in the *Annales du Museum*, that much attention was drawn to this subject. Since then, Lamarck and Blainville contributed something to the knowledge of their physiology and relations, but not much to the number of species.

Although little had been done up to this time by British Naturalists in augmenting the species of this beautiful family, they have been, since, the subjects of most accurate and fruitful research ; and the monograph now publishing by the Ray Society, on the "British Nudibranchiate Mollusca," may be regarded as one of the most remarkable contributions made to the literature of Natural History during the present century. Continental naturalists have also added several new European species during the last half century.

With the imperfect knowledge of foreign species that we yet possess it is scarcely possible to arrive at any satisfactory conclusion concerning the general distribution of the *Nudibranchiata* in the different regions of the globe. The tropical forms are, as usual, larger and more brilliantly coloured than those of colder climates, but the notices of extra European species are so scanty, that we cannot form any idea of their numerical preponderance. * * * * It cannot be doubted that a great deal of the apparent deficiency of other genera, in comparison with the *Dorididæ*, in foreign countries, arises from the want of proper examination, and from the little attention paid by collectors to the less conspicuous forms.*

In 1841, the celebrated Naturalist, M. Sars, announced the discovery, that these little creatures undergo a metamorphosis, having on their extrusion from the egg a very different form and character from those which they are afterwards destined to assume. In this first stage of their existence, they have the appearance of small animalcules, swimming freely through the water by means of two ciliated lobes, and have their body covered by a nautiloid shell furnished with an operculum. Up to

* Having paid this attention to "less conspicuous forms," I am enabled to add considerably to several genera.—E. F. K.

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that time nothing approaching to a distinct metamorphosis had been known to exist in any of the true Molluscs.

The *Nudibranchiata* exhibit a high state of organization. They are all provided with a powerful muscular buccal apparatus, which has, in some instances, appended to it a gizzard. The oral aperture is guarded by fleshy lips, and the mouth is furnished with a tongue, bearing a spiny prehensile membrane, and occasionally with lateral corneous jaws.

The œsophagus, stomach, and intestines are well marked; the former is generally short, and passes from the upper surface of the buccal mass. The stomach is frequently buried in the liver. The intestine is always short.

The liver presents two great types of form. In the *Dorididæ* and *Tritonidæ* it is entire (excepting in *Scyllæa*, where it is broken up into 6 or 7 globular masses), occupying its normal abdominal position; in the *Eolididæ* it is more or less diffused.

All the Nudibranchs are hermaphrodites, each individual being furnished with male, female, and androgynous parts. These organs, taken together, are very bulky, and occupy the greater portion of the abdominal cavity. They communicate with a common vestibule, opening upon a nipple-like process on the right side of the body, and always below the mantle, when it is present.

The organs of circulation and respiration consist of central organs of propulsion,—a systematic and portal heart,—arteries, veins, and sinuses or lacunes; and of laminated, branched, or papillose branchiæ; arranged either on the medial line, or along the sides of the back. The flow of blood is rapid; the pulsations of the heart varying, in the different species, from 50 to 100 in the minute.

The nervous system presents a high degree of concentration, perhaps higher than in any other group of *Mollusca*,—and is divided into two very distinct portions:—one, the cephalic or excito-motor; the second, the splanchnic or sympathetic; these two portions intercommunicate at several points.

All the Nudibranchs are provided with auditory capsules. Eyes are also universally present. The dorsal tentacles are the organs of smell, and, judging from their great development, this sense must be more acute in most of the Nudibranchs than it is in any other Mollusc, with the exception perhaps of *Nautilus*. Touch undoubtedly resides everywhere in the skin, but it is specialised in the oral tentacles and parts about the mouth. The lips and channel of the mouth are probably the seat of taste.

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Their ten city of life, when kept in confinement, varies much in the different species, but is greater than in many other marine animals.

Though patient and long-suffering in the endurance of hunger, they are very voracious. The greater number of them are carnivorous; living principally upon Zoophytes and Sponges. The Eolides do not scruple occasionally to devour the weaker among their own brethren.—*Abridged from English Cyclopædia.*

Hoping that the foregoing anatomical and physiological account of the *Nudibranchiata*, will draw more than ordinary attention to this family of marine creatures (found on almost every rock and sea weed), I shall proceed to give a descriptive account of upwards of a hundred species of marine-animals, including Sea-anemones and *Planaria*, found in the harbour, bays, and coves of Trincomalie. I cannot but regret, that not having with me Ruppel and Ehrenberg's work on species found in the Red Sea, I am not able to speak positively of *all* those herein described as being new to science. Some may, perhaps, have already been described by earlier observers, which, if ascertained to be the case, I shall only be too glad to take the earliest opportunity of acknowledging.

In concluding these prefatory remarks, I have to express my personal obligations to those authorities who have retained my military services in Ceylon, thereby enabling me to resume my Zoological labours, which were precipitately and unexpectedly shortened by my removal from the Island.

Trincomalie,
1st November, 1857.

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CEYLON NUDIBRANCHIATA MOLLUSCA.

(NAKED MOLLUSCS.)

Sub-Kingdom.	MOLLUSCA.
Class.	GASTEROPODA.
Order.	NUDIBRANCHIATA.
Fam.	DORIDIDÆ.

Branchial plumes surrounding the vent on the medio-dorsal line.

Sub-Family.	DORIDINÆ.	With a cloak.
Genus	DORIS.	*Linnæus.*

Animal oblong, covered by a mantle; four tentacles, two superior or dorsal, clavate or conical, retractile within cavities, sometimes slightly sheathed. The two inferior or oral tentacles placed on each side of the mouth, sometimes absent or replaced by flat appendages; eye specks immersed behind the dorsal tentacles, not always visible in the adult; lingual membrane with numerous lateral teeth; rachis often edentulous; stomach simple; liver compact; skin strengthened with spicula, more or less definitely arranged.

DORIS GLORIOSA. *Kel.*

Synonym. DORIS MARGINATA? *Leuckart.*

Body nearly 3 inches long; oblong, of a pinkish colour minutely dotted with red and white. Mantle large, oval, broad, when expanded entirely covering the foot. Back mottled with pink, red and yellow, and minutely punctulated with red and

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yellow, edged broadly with white, then by a rich broad red line; adjoining this is a whitish space, and carried round the mantle, near the body, is a still more brilliant blood red line, with internal club-shaped prolongations of the same beautiful purple red colour. Interspace and for about a quarter of an inch of breadth of the back, the mantle is again whitish, with shades of purple and yellow nearer the beautifully mottled back. The underside of mantle has also a broad white edge, the rest brilliantly variegated with dotted purple, yellow and red splashes. Branchiæ 7 or 8, large, branched; each rising from a separate cavity in a circle about half an inch from a protruding yellow coloured anal orifice. Plumes roseus, with red midribs. Dorsal tentacles large, clavate; apex pointed, slightly truncated, on inner edge laminated; colour pinkish and spotted yellow; ridge of cavity spotted with yellow and red. Head large, protruding nearly three-quarters of an inch from mantle. Mouth near foot, situated in the centre of an oval projection, and on each side a long broad toothed leaflet or oral appendage, red and dotted like the head. Foot long, broad, with parallel sides, rounded and transversely split in front. It has a broad lemon coloured edge with transverse striæ; the rest pinkish red, not spotted; a dark purple spot in centre given by the internal viscera.

This is by far the most beautiful species of *Doris* or sea nymph I have ever seen, and none but a good artist could do justice to its resplendent beauties. The large ample surface of the mantle, with its soft, snowy white undulating edge, is best seen when the animal is swimming, and reflecting in the water the rich red folds near the golden speckled back, on which is placed a broad circle of rosy coloured feathery tufts. The live specimen, of which the above is but a faint description, was found under corals in low water near Fort Frederick. In another specimen from the same locality, the white edge of the mantle was replaced by a rich crimson red, which coalesced with the inner red line, leaving a faint white line. Indeed, it is a question which of the two varieties looked more beautiful; at night, however, the palm of beauty was awarded to the red margined specimen. They both lived for some days in

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a vivarium. When at rest, the mantle was turned inwards towards the back ; in this position the white and red lines were hidden by the broad rolls on each side, displaying the rich profusion of red and yellow dotted splashes and undulating lines of the under surface of the mantle. In fact, it then looked like another species, but it is only when the mantle is fully expanded and floating on the water, that the unrivalled charms of this beautiful sea nymph is seen to perfection. In the young, the mantle extends round the head, and may be mistaken for a distinct species. I have not had an opportunity of seeing the spawn of this species.

If this splendidly coloured sea nymph is identical with Leuckart's species, found in the Red Sea, and named *Doris marginata*, I should still prefer retaining the name I have given it, as "*marginata*" would apply, equally as well, to several other species as to this.

Doris MacCarthyi. *Kel.*

Body nearly 2½ inches long ; dusky grey. Mantle long, narrow, dusky grey ; bordered with a bright blue line ; edge crenulated, wavy. Dorsal tentacles long, conical, obtusely pointed ; laminated obliquely, for nearly two-thirds of its length ; of a pale blue colour with white streaks. Oral tentacles white, short, broad and rounded. Branchial plumes 12 to 15 ; irregular, most of them of unequal length ; pinnated, and a few trifurcated ; others have a small cluster of plumes rising from the middle or extremity. Foot white, and nearly as long as the mantle.

This curious, but elegant species is semi-gelatinous ; and resembles a *Goniodoris* from its narrow mantle, which scarcely covers the foot ; the body is almost exposed.

I have dedicated this beautiful species to one who has always encouraged my pursuits in the field of Natural History. To Sir Charles MacCarthy, the Colonial Secretary of Ceylon, I feel grateful for that assistance which his position in the Island enabled him to give me, whenever required ; and I also feel

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thankful to him for the warm interest he has taken in my employment as Naturalist, to investigate the Natural History of the Pearl Oysters, which has so abruptly been brought to a conclusion by my professional services being required in another part of Her Majesty's dominions,—the rebel polluted land of India.

Doris cœlestis. *Kel.*

Body white, 2¾ inches long; flattened. Mantle coriaceous, white, clouded with dark purple minute rings, confluent or continuous with lighter coloured purple rings, set more widely apart. Dorsal tentacles white, long; apex clavate, lamellated, slightly truncated on the superior edge; pale green, tipped with orange; margin of sheath orange or golden. Oral tentacles long, acutely pointed; white, minutely speckled with purple. Branchial plumes 6, long, tripinnated; whitish, ribs purplish brown, edge of cavity orange. Foot white, shorter than mantle; grooved; lower lamella notched.

This beautiful purpled clouded *Doris* is of very retiring habits; scarcely ever seen moving. Obtained in August and September from rocks in Back Bay. Ova white, in three or four broad coils.

Doris funebris. *Kel.*

Body nearly 1¾ inch long; oblong, convex; of a waxy white colour, and spotted black. Mantle coriaceous, granular; of an ivory white colour, and ornamented with jet black spotted circles and half rings or imperfect annular spotted figures. Dorsal tentacles large, clavate; apex black, laminated, without sheaths. Oral tentacles linear; white, tip black. Branchial plumes 6, large and drooping, tri-pinnate; white and shaded lavender grey; midribs of a dark brown colour. Foot waxy white; spotted irregularly on the margin of edges with small and large linear spots.

This elegant funereal looking *Doris* is, with the mantle, about 2¾ inches long, and 1½ broad. Rarely seen. Lives for a long

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time in the aquarium. Deposits its ova in broad convoluted bands, which, when uncoiled, measure nearly 18 inches in length. A pair kept in the aquarium were seen to spawn in July. While one was depositing the band of ova on the side of the glass globe, the other kept watch, as it were, by moving in a circle round the former. The whole process lasted about half an hour.

The spots and markings of some specimens were of a dark brown colour. In others the spots were of an auburn colour.

Doris Gleniei. *Kel.*

Semi-gelatinous. Body nearly 1½ inch long. Mantle broad, shorter than foot,—above, white, with a pinkish yellow shade ; a large irregularly waved deep golden coloured patch on the back, bordered and spotted with purplish red. The under surface of fore part of mantle, of a beautiful light purple colour. There is also a purple line on each side of the white body. Dorsal tentacles white, with golden coloured laminæ ; long, conical and pointed. Oral tentacles short, white. Branchial plumes 7 to 9, short, lanceolate, pinnated ; white, bordered with golden yellow. Foot pinkish white ; edge pure white.

This beautiful species I have named after my friend the Rev. Owen Glenie, Colonial Chaplain of Trincomalie, who was often the cheerful companion of my zoological pursuits, and who will, I hope, on my departure from the Island, continue those researches which he has so well begun.

This is perhaps next to *Trevelyana Zeylanica* (*n. s.*) and *Doris Gloriosa*, the most remarkably coloured species in Ceylon. Found in the Inner Harbour in deep water, as also at Kottiar, opposite Fort Frederick.

Doris leoparda. *Kel.*

Body ⅞ inch long, grey spotted. Mantle carneous, granular ; grey, and spotted with dark grey and blackish circular spots ; the latter in the central parts ; each spot composed of smaller spots, separated from each other by white reticulations, seen

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more distinctly with the aid of a magnifier. Dorsal tentacles green; large, broad, ovate, lamellated for nearly the whole length. Oral tentacles short, linear, acutely pointed. Branchial plumes 6, grey, speckled with darker grey, all united for nearly half the length; the other half fringed with short plumes of a light green colour. Foot whitish, speckled; covered by mantle

This Leopard-spotted *Doris* is of a regular oval form. Found in Dutch Bay among coral rocks.—Ova white.

Doris amabilis. *Kel.*

Body 4 lines long, oblong, narrow, convex, white, spotted purple on sides. Mantle smooth, white, and spotted with purplish crimson spots; beneath white, not spotted. Dorsal tentacles of moderate length; apex conical, pointed; closely lamellated; of a golden yellow colour. Branchial plumes 5 or 6, small, bi-pinnate; white, with purple spots at their base. All retracted within a cavity, without a rim. Head rounded, spotted purple, on each side of mouth a short linear tentacle, white. Foot narrow, longer than the mantle, slightly expanded in front, spotted purple on the upper surface.

This lovely little *Doris* is rarely found. Two specimens, obtained in May, are still alive in a finger glass, generally resting on the side of a stone. At night they crawl out of their hiding place and creep along the sides of the glass, and are sometimes seen floating on the surface of the water on their back. When touched with a feather they adhere by their foot, and can be kept dangling in this position by the aid of the mucous thread secreted by the surface of the foot. Several *Eolidæ* were kept in the same vessel, and they have survived them all, though attacked repeatedly by the *Eolis*. Ova white, deposited on side of glass in a thread-like coil.

Doris fidelis. *Kel.*

Body ⅜ inch long; narrow, convex; white. Mantle oblong, with parallel sides; shorter than the foot; of a waxy white colour, the edge lined with red and irregular tooth-like transverse

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internal prolongations of the same colour; those on sides, longer, alternated with short ones. Branchial plumes 7 or 8, black; lanceolate, pinnated, few branched at tip. Dorsal tentacles oblong, flattened, pointed; apex black, lamellated. Oral tentacles small, acutely pointed. Foot white, narrow, slightly dilated in front, and pointed posteriorly.

Found on coral rocks at low water mark, in August and September. This singularly marked species looks, when the tentacles and branchiæ are retracted, like a large bean. Its jet black plumes and tentacles appear very conspicuous above the red margined white mantle. It is very tenacious of life. Ova deposited in narrow white coils.

DORIS PRECIOSA. *Kel.*

Body white, ⅜ inch long. Mantle pale greenish yellow, very light coloured on sides, where there is also a blueish shade; closely speckled with small reddish-brown spots; margin marked with a narrow purple red line and a light orange shade. Dorsal tentacles short, with reddish-purple apex, clavate, laminated. Oral tentacles triangular, sharp pointed. Branchiæ short, pinnated; reddish-purple. Foot white, shorter than mantle.

This gem-like elegant species, is of the same size as *D. Fidelis*, and not unlike it in appearance. The deep blood-red branchial plumes, and the red margined speckled cloak, sufficiently separate it from the last species. They are both found in the same locality, and at the same time. The characters of the young species are also very marked, as in the adult specimens.

DORIS NIVEA. *Kel.*

Body ⅜ inch long, convex, elliptical, snowy white. Mantle coriaceous, granular; white, occasionally seen speckled indistinctly with small grey spots. The purplish coloured viscera seen through the opaline back. Dorsal tentacles pure white, short, conical, pointed slightly, lamellated at tip. Oral tentacles linear. Branchial plumes 6 or 7, white, bi-pinnate. Foot white, shorter than mantle.

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This snowy white opaline *Doris*, is probably only a variety of *Doris pallida* of Leuckart, found by Ruppel in the Red Sea. It has not, however, all its characters ; the cloak resembles that of *D. repanda* in some respects. It has white, nerve-like lines on the margin. I have only seen one specimen, which lived for a few days.

Doris marmorata. *Kel.*

Body 2½ inches long, oblong, convex, coriaceous ; white, speckled reddish-brown. Mantle broad and long, covering the foot; thick, hard, granular; marbled with black and reddish-brown, and irregularly spotted white. Under surface white, and mottled with irregular shaped purplish-red spots. Branchial plumes 6, united at base, superior half plumose, tri-pinnated, grey and grizzled with brown. Dorsal tentacles large, clavate, laminated ; brown and speckled white. Sheaths granular. Head small ; oral tentacles long, linear, acutely pointed. Foot white, deeply notched and grooved in front ; spotted reddish-brown.

This large marbled *Doris* lived only for a few days. They are found on rocks near Fort Frederick at low-water mark. Some are of a darker brown colour than others.

Doris cerisa. *Kel.*

Body ⅓ inch long, convex, oval ; of a vermillion-red colour. Mantle of a cherry-red colour, covering the foot. Branchial plumes 6 or 7 ; very small, straight and stiff ; bi-pinnated ; of a crimson-red colour. Dorsal tentacles small, conical, lamellated, purplish red ; speckled white, tip grey. Oral tentacles indistinctly seen. Foot pinkish.

I have only seen one specimen of this exceedingly pretty species. It lived for several months in a finger-glass. It cannot be mistaken for the young of any other Ceylon species herein described. Ova red, in six narrow tape-like coils. The ova of *D. rubra* (*mihi*) are white.

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DORIS RUFOPUNCTATA. *Kel.*

Body ¾ inch long, oval, compressed ; of a white colour. Mantle coriaceous ; of a light brick-red colour, and speckled with circular spots of a darker reddish-brown colour. Branchial plumes 5 small, bi-pinnate ; greyish, speckled rufous. Dorsal tentacles short, clavate, pointed, laminated, without sheaths ; of a rufous brown colour. Oral tentacles white ; linear. Foot whitish ; short, grooved and notched in front, speckled rusty. Under part of cloak whitish, and also speckled rusty.

This stiff-looking *Doris* is occasionally seen in a circular form. Rarely found, among Pearl Oysters ; very tenacious of life.

DORIS GRISEA. *Kel.*

Body 1½ inch long, gelatinous. Mantle of a dark ashy-brown colour, closely speckled with reddish brown and white spots, and two or four longitudinal rows of larger blackish irregular spots. Tentacles clavate, laminated ; ashy-brown speckled white. Branchial plumes 5 whitish, speckled grey ; tri-pinnate. Mouth surrounded with a white veil (?) Foot whitish, spotted reddish-brown ; notched in the fore part ; covered entirely by the mantle. Some specimens are more reddish-coloured than others. The young are nearly always more ashy-coloured.

A very common species, found from March to September in low water, on rocks surrounding Fort Frederick, and also in the Inner Harbour. Lives a long time in the aquarium. Ova white, in three or four white coils. This *Doris* can elongate itself into the shape of a leech.

DORIS PAPILLOSA. *Kel.*

Body ¾ inch long, white, brown spotted. Mantle coriaceous, covered with large papillæ, each rising from a circular tubercular base, or ring. Buff, and spotted dark reddish-brown ; a row of larger spots round the margin. A dark brown line runs from base of tentacles to branchiæ. Dorsal tentacles

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large, apex clavate, laminated, of a light green colour, speckled white. Oral tentacles short, linear. Foot whitish and spotted with rusty-brown ; shorter than mantle. Branchial plumes 6 ; short, tri-pinnated. Posterior three plumes rusty-coloured ; anterior ones whitish.

This spécies resembles *Doris rufopunctata*, but its green dorsal tentacles, and papillose tubercles on mantle, sufficiently distinguish it from other species. Ova white, laid in four narrow waved coils.

DORIS RUBRA. *Kel.*

Syn. DORIS SOLEA. ? *Cuv.*

Body 1½ inch long, oblong, pellucid-red. Mantle crimson-red, and maculated with irregularly shaped dark brick-red or purple spots ; those on the back larger. Tentacles large, clavate; apex red, laminated. Branchiæ 6, of a light rose colour ; large, tri-pinnate. The two anterior ones smaller than the rest. Foot oblong, broad, of a pinkish-red colour ; longer than mantle; rounded in front and transversely grooved ; anterior lamina notched in centre. Oral tentacles linear ; mantle extended, nearly three inches.

This beautiful red species is found in great abundance in and out of the harbour of Trincomalie ; and is generally seen on mossy rocks a few feet below the surface of the water. When confined in a glass vivarium, it becomes, at night, nearly throughout, of a pellucid pinkish-white colour, which hue it retains till dawn, when gradually it assumes the brilliant red diurnal costume. Spawns in the months of May and June ; ova deposited in three or four large, white, ribbon-like convolutions.

DORIS OSSEOSA. *Kel.*

Body 1 inch long. Mantle hard, cartilaginous, granular and pitted ; granules of a whitish colour ; on the median line is a narrow ridge extending from base of tentacles to branchial plumes, which are four or five in number, emerging horizontally

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from under the posterior termination of dorsal ridge. In some specimens there is a large pitted protuberance on centre of ridge. Dorsal tentacles with large granular sheaths; apex conical, lamellated; of a pale green colour. Oral tentacles white. Foot small, narrow. Branchial plumes small, bi-pinnated.

This curiously formed *Doris* resembles a piece of bone, or piece of worm-eaten white stone. Its habits are those of the other *Doridæ*.

Doris Constantia. *Kel.*

Coriaceous. Body ¾ inch long; light yellow. Mantle yellowish-brown, granular; dark brown spots on edge. Dorsal tentacles yellow, conical, swollen at the apex, laminated; tip produced, white. Oral tentacles small, linear. Branchial plumes whitish, five or six, small, bi-pinnate. Foot small, covered by the mantle. Under parts yellowish.

I have only seen one of this species, which lived for many months in a vivarium. It came nightly to one of the oysters, and apparently fed on the back of the shells, upon the atoms of life found there.

Doris luteola. *Kel.*

Semi-gelatinous. Body ¾ inch long. Mantle granular, yellowish, and shaded with darker yellow. Dorsal tentacles long, black, lamellated apex. Oral tentacles short, white. Branchial plumes long, bi-pinnate, greenish. Foot white, shorter than mantle.

This elegant species is found in shallow water; spawns in October. Ova light green, in two narrow tape-like convolutions.

Doris viperina. *Kel.*

Body 2 inches long; white. Mantle coriaceous, oval; covered with short spinous tubercles, of a grey colour; and beautifully spotted with dark grey and purplish brown spots having a blueish shade. Under surface of mantle white, with

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purplish spots, a purplish line runs near the edge; border transversely streaked. Dorsal tentacles, greenish, long, white, slightly truncated, laminated clavate tops. Oral tentacles white; long, pointed. Branchial plumes 6; short, broad, bi-pinnate; of a greenish white colour. Foot oblong, entirely covered by the broad oval mantle; white, spotted with smaller purplish spots than those seen on the under surface of mantle.

Found in deep water, near French Battery.

Doris atrata. *Kel.*

Body ½ inch long, and ⅓ inch broad; ovate, convex; of a smoky-black colour. Mantle broad, when expanded covering the foot; smooth, edge semi-transparent, the rest jet-black. Branchiæ 8; small, of a smoky-black colour, bi-pinnate; two sets of 4 each, all entering the same cavity round anus. Foot long, narrow, rounded in front, slightly projecting behind when in progression; of a pale smoky colour. Mouth indistinctly seen. Oral tentacles linear. Dorsal tentacles pellucid, with clavate apex; black; tips white, looking like eyes set on the tentacles. Ova white, in three or four small narrow tape-like coils.

This species may prove to be either identical with *Doris fumata* of Leuckart, or *D. fumosa* of "Quoy et Gaym," the latter more probably, as the remarkable, white tipped tentacles (always present), could not have passed unobserved by Ruppel. The branchiæ however, of *D. fumata* would appear to correspond with those of the Ceylon species. The next species too, which I regarded at one time as only a variety of *D. fumata*, must, I think, be considered distinct, as it was not found in April with *D. atrata*, but subsequently, when the latter became scarce.

Doris atroviridis. *Kel.*

Body 10 lines long, of an invisible-green colour. Mantle broad, undulating, of a greenish-black colour; edge streaked with a pale crimson line. Tentacles and branchiæ as in *D. atrata.* Foot of a pale invisible-green. Ova like those of

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the preceding species. Some of the specimens had the mantle indistinctly, but regularly, spotted white ; these spots, composed of several smaller spots round a centre, looked, through a magnifier, like little stars.

The young of this species is of a jet-black colour, with a broad brilliant crimson line round edge of mantle and foot. If I had not specimens of different ages to compare with, and observe the gradual diminution of the intensity of the red line, till it became almost obsolete in the larger specimens, I should be inclined to consider the characters of the young to be those of a distinct species ; so very great are the external characters of the young and older animals. The presence of the red line in the young of this species, and its non-existence in the young of *D. atrata*, still more confirms me in the opinion already advanced, that they are not identical species. Both are very sluggish in their habits ; generally, two or more lie locked in each other's embraces, under a stone or a coral branch. In confinement they live longer than any species I have had under observation.

Doris variabilis. *Kel.*

Body 6 lines long, pellucid green ; the red viscera seen through it. Mantle greenish-brown, and marked with longitudinal rows of reticulated whitish spots. Dorsal tentacles clavate, laminated; greenish-brown, speckled ; tip white. Branchial plumes 8, small, round a central cavity, tri-pinnate ; brown, speckled white. Foot pellucid-green ; shorter than mantle.

This species is found in great abundance on rocks in Dutch Bay at low-water mark. They vary much in depth of colour ; green, however, always prevailing. In habits, like *D. atrata.*

Doris exanthemata. *Kel.*

Body 5 inches long ; pinkish or light purple colour. Mantle long, broad ; covered with large and small, smooth conical and rounded nodules, rising from smooth elevated bases. The upper surface is of a deep olive-brown colour, having several white splashes ; edge of a lemon colour. Under surface of mantle

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pinkish, and near the body there is a broad undulating reddish band, terminating abruptly on each side below the foot, not unlike in appearance to some cutaneous disease. Dorsal tentacles long; pinkish and smooth for two-thirds of its length, apex clavate, laminated, truncated; of a pale brown colour. Oral tentacles long, conical; pinkish. Branchial plumes 6; large, pendant tri-pinnated; plumes pinkish-red and speckled-white; midribs greenish. Foot much shorter than mantle, deeply grooved and notched in front, obtusely pointed posteriorly; of a light pink colour, except the edge which is of a lemon colour with transverse striæ.

The whole animal gives one more the idea of a horrid disease than the charms of a sea nymph. This species is semi-gelatinous and very glutinous on the surface, particularly the mantle. When dead it rapidly dissolves, and cannot be preserved in spirits. The largest specimen I have seen measured 8 inches long and 5 inches broad. It will not live more than a few days in the aquarium. Ova of a beautiful red colour; coil ¾ inch broad, and 18 inches in length. This species resembles *Doris carbunculosa*, but the smooth nodules, and the red ova, of the former will always be sufficient marks of distinction.

DORIS CARBUNCULOSA. *Kel.*

Body nearly 4½ inches long; oblong, oval; of a pinkish-purple colour. Mantle semi-gelatinous, broad and long, and of an oval form; purplish-brown colour, studded with numerous large warty nodules, and larger ones rising from a raised tubercular ringed base. Nodules of a deeper brown colour; some have also a greenish tinge and others are variegated with white. Dorsal tentacles long, produced, clavated, truncated superiorly, laminated; of a pale purplish colour. Mouth with a small triangular-shaped veil. Branchial plumes 5; large, broad and long; closely tri-pinnated; of a rusty-red colour, grizzled with white. Foot short, oblong, oval; of a purplish-pink colour; sides of under surface veined and of a pink colour.

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The mantle of this inelegant *Doris*, is not unlike some carbuncular formation. The under surface is pinkish and shaded with purple. It is a very unsightly object. The edge of the mantle of the young is mottled-yellow. The whole animal is nearly 5 inches long, and 3½ broad in the centre. Ova white, deposited in narrow tape-like form in four or five broad coils. The white ova alone sufficiently distinguish this ugly sea-nymph from her rival *D. exanthemata*.

Doris intecta. *Kel.*

Body 1¼ inch long. Mantle warty; of a dark-brown colour, nearly black; on the medial line is a thick white pasty line. Dorsal tentacles brown; clavate, laminated. Oral tentacles long, linear, pointed; of a bright-brown colour. Branchial plumes 6, tri-pinnated; of a golden-brown colour. Foot golden-brown; narrow, longer than mantle.

This warty *Doris* is easily distinguished from others of a brown colour by its rufous warty mantle, and the dirty-white line on back. Even the young have the white dorsal streak. Very common in low water in the months of September and October.

Doris lanuginosa. *Kel.*

Body ⅓ inch long; of a pale-green colour. Mantle green, covered with short downy hair. Dorsal tentacles green, lamellated, pubescent. Oral tentacles not observed. Branchiæ 10 or 12; small, of a sap-green colour, bi-pinnated. Foot shorter than mantle; of a pale-green colour, transparent.

Of this downy species I have only seen one specimen. It lived only a few days. Found near Nicholson's Cove.

Doris spongiosa. *Kel.*

Semi-gelatinous. Body nearly 3½ inches long. Mantle broad, oval, covering the foot in all parts; of a dull yellow-brown colour, deeply pitted; margin of pits granular; cavities spongious. The whole upper surface of mantle looks like the

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surface of some species of sponge. Beneath of a darker yellow-brown colour. Dorsal tentacles large, with slightly truncated, laminated apex, sheaths large, funnel-shaped ; granular. Oral tentacles (?). Branchial plumes 5, grey, drooping much ; bi-pinnated. Foot broad, long.

This very curiously formed *Doris* is found in deep water in the Inner Harbour. The young may be mistaken for a distinct species, from the lateral cavities or pits being deeper. The whole animal is nearly the size of *D. exanthemata.*

Doris striata. *Kel.*

Coriaceous. Body 1½ inch long. Mantle nearly smooth ; white, with light-brown wavy streaks. Under surface white, with linear wavy streaks near the body. Dorsal tentacles with short conical, laminated apex. Oral tentacles white, linear, pointed. Branchial plumes 5 or 6, small, bi-pinnated ; white, streaked with brown. Foot pure white, narrow, oblong. Found in Dutch Bay.

Doris corrugata. *Kel.*

Body nearly 1 inch long, oval, whitish. Mantle coriaceous, corrugated, and studded with small tubercles ; those on the sides larger, and each has a spine ; of a pale watery-green colour ; black spotted under surface, also greenish and spotted with small dots. Dorsal tentacles short, open, greenish, lamellated. Branchial plumes grey ; 7 or 8, short, pinnated. Foot pale-green ; narrow ; shorter than mantle. Oral tentacles short, triangular, pointed.

I have seen only one live specimen of this curious *Doris.*

Doris picta. *Kel.*

Coriaceous. Body 2½ inches long. Mantle large, oval, covering entirely the foot ; upper surface granular, of a yellowish-brown colour, splashed with large and small irregular brick-red spots ; under surface white, and near the body painted with small and large bright red spots. Dorsal tentacles clavate,

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laminated, slightly truncated; sheaths large, granular. Oral tentacles long, pointed; white, spotted red. Foot broad, shorter than mantle; white.

This remarkably painted *Doris* is found in deep water. Occasionally it burrows in the sand, where it lies for hours,—plumes and dorsal tentacles alone being uncovered.

Doris bellicosa. *Kel.*

Coriaceous. Body 2¼ inches long. Mantle large, oval, upper surface granular, and covered with small spines; of a dull brick-red, or chocolate colour, and irregularly streaked with pale-yellow. Under surface of mantle white, splashed and spotted with chocolate. Branchial plumes 6, large, bi-pinnated; of a dull-rose colour, and speckled yellow in small specimens. Dorsal tentacles with small clavate, pointed, apex. Oral tentacles white, short, pointed. Foot broad, oval, of a dark-red colour with a pale whitish edge.

Found in deep water in the Inner Harbour of Trincomalie. The mantle of this species resembles much that of *D. picta*, but its spines and chocolate-coloured foot sufficiently distinguish it from that species, which has a white foot and beautifully painted under-side of mantle. They live for many months in a vivarium,

Doris castanea. *Kel.*

Carneous. Body 1¼ inch long. Mantle thick, granular and tubercular; of a reddish-chestnut colour. Dorsal tentacles red, short, laminated; tip produced, whitish. Oral tentacles short, linear, pointed. Branchial plumes 6 (?), short, bi-pinnated; of a purplish colour. Under parts deep vermillion-red, and speckled with darker red. Foot short, red.

Found near Sober Island, Trincomalie Harbour.

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Sub-genus. ONCHIDORIS.

ONCHIDORIS LEACHII, *Blainv.*

Carneous. Body oval, about 1¼ inch long. Mantle granular and studded with filamentous granules. Those on the posterior third of mantle often large, and appearing like small branchial plumes. No dorsal tentacles. Two oral tentacles, which appear to protrude through notches, from under the anterior edge of mantle. The foot is broad and nearly occupies the whole of the under part of mantle. Anus opens on the under surface of the posterior part of mantle. Orifice of the organs of generation on the right side.

Found on rocks in the Inner Harbour. I have scarcely any doubt, that this is the *Onchidore* described by Blainville from a specimen seen in the British Museum, whose *habitat* was not known.

The colour of the animal is of a light-grey, mottled with black spots in some specimens. In spirits the filamentous granules are not seen, but when the animal is alive they are so distinctly, and the contractile character of the filaments are very observable, especially of the larger ones.

TREVELYANA, *n. g.*

Body without a cloak. Two dorsal tentacles without sheaths, non-retractile. Mouth in front of head, without tentacles. Branchiæ in a circular disc on the back ; non-retractile.

TREVELYANA ZEYLANICA. *Kel.*

Body 1¾ inch long, narrow, elevated and inflated near the branchial plumes ; semi-gelatinous, white and spotted with small dark orange-red spots, set wide apart from each other. Head rather produced and rounded ; also spotted red. Mouth circular, small ; situated in front, without veil or tentacles. Branchial plumes 15 or 16, situated on posterior third of body, round a large disc, in the centre of which is the vent. Plumes long, downy, closely set ; pure white, with a longitudinal

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bright red streak on the back of each; slightly contractile, but they do not retract into a cavity; when extended, they resemble a small tuft of marabout feathers. Genital orifice in a nipple-like process, situated between the anterior and middle-third of body. Foot long, and broad; terminating posteriorly in a lancet-shaped point, about ¼ inch from body; white, with a delicate light orange-red line on the edge of the foot; this line is carried partially on each side of head. Tentacles 2, dorsal; short, conical, pointed; upper half indistinctly laminated; of a light orange-red colour at tip; base colourless, transparent. Ova yellow, deposited in bead-like coils. They generally deposit the coils on branches of sea-weed. Sometimes this *Doris* resembles a miniature fan-tail pigeon; particularly when perched on sea-weed, and the small marabout plumes are elongated.

Found on rocks and sea-weed near Sober Island.

This elegant creature does not resemble any of the described species. The form of the body is not unlike that of the genus *Ancula.* Its nearest approach, in other particulars, is to *Polycera.*

I venture to make a distinct genus of this *Doris*, and dedicate it to Sir Walter Trevelyan, to whom I am indebted so much for the liberal aid he has afforded me in my researches into the Natural History of Ceylon.

Fam. TRITONIADÆ.

MELIBŒA. *Rang.*

Animal elongated, with a narrow, channelled foot, and long slender tail; sides of the back with pairs of tuberculated lobes, easily deciduous; tentacles cylindrical, retractile into long trumpet-shaped sheaths; head covered by a lobe-like veil; sexual orifices behind right tentacle; excretory behind first gill on the right side.—(*Woodward.*)

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MELIBŒA VIRIDIS. *Kel.*

Animal gelatinous, transparent, of a greenish vitreous colour. Body covered with hairy filaments. Head small, nearly circular, covered with filaments. Veil large, and very expansive ; circular opening lined with cilia. Tentacles 2, about $\frac{3}{8}$ inch long ; capsule small, covered with filaments. Branchiæ 6 or 7 on each side, unequal, wedge-shaped; placed alternately ; base broad ; slightly pedunculated, covered with cilia and filaments, giving a very hairy appearance ; base brown ; the other parts greenish and speckled with dirty white. Foot narrow, of pinkish colour on edge, and upper surface covered with short filaments.

Nearly 3 inches long.

Found on weeds near Inner Harbour ; not common ; can swim very actively. The veil over the head is used as a net doubtless to entangle its prey. The opening is very dilatable. Deposits its ova in a flat mass ; ova white.

SCYLLÆA (?) DRACÆNA. *Kel.*

Animal green ; elongated, narrow. No mantle. Two tentacles placed anteriorly on side of head ; non retractile ; tentacles folded or cylindrical, slightly granular. On the centre of the back there are three unequal wing-like denticulated lobes, of a green colour, with a tooth-like processes, tipped red ; sides of the posterior half of body also toothed with two lines of small, pointed, red-tipped tubercles. Foot narrow, channelled. Mouth protected by two small semi-orbicular flaps or veils. Orifice on right side. Length nearly 1 inch.

I have some doubts as to the propriety of placing this species under the genus *Sycllæa.* I could not discover any tufted branchiæ on the surface of the dorsal lobes. I propose naming this genus, closely allied to *Glaucus,* if new, in honor of Dr. Templeton, late of the Royal Artillery (brother of the Belfast Naturalist) who has contributed considerably to the Fauna of Ceylon.

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I have found only one specimen on a branch of sea-weed. It looked at first like a piece of green weed, but on placing it in fresh sea water, the lobes expanded and waved about very briskly. The red tips of the lobes contrasted beautifully with the bright green of the animal. It lived only a few hours.

POLYCERA (?) ZEYLANICA. *Kel.*

Body ½ inch long. No distinct mantle. Head covered by a membranous fimbriated veil; the long filaments slightly toothed. Veil continuous with a narrow membranous expansion on side of body, which are united at the tail. Large fimbriated filaments also on sides of body. A membranous crest runs on the medial line of back. Dorsal tentacles retractile in a sheath; clavate, laminated, incurved at the tip; brown, white tipped. Oral tentacles white; broad and short. Branchial plumes 5, short, bi-pinnated, retractile, placed in a circle, in the centre of the back, near the third pair of dorsal filaments. Colour above, bright orange-red; beneath whitish, with red specks seen through the transparent foot. Ova, bright red; in narrow coils. The whole animal is scarcely 1 inch long; and its broadest part not more than ⅜ of an inch.

I have placed this species, very doubtfully, under the head of *Polycera*. I believe there is sufficient reason to make a new genus of the leading characters of this pretty little creature. The transparent membranous expansion is fully extended when the animal swims, which it does, more freely than any known species. For 10 or 15 minutes it will keep floating and moving its body like an eel in the water. Very rare; a few specimens lived for many months in my vivarium.

Fam. ÆOLIDÆ.

Animal with papillose gills, arranged along the sides of the back; tentacles sheathless, non-retractile; lingual teeth 0. 1.0; ramifications of the stomach and liver extending into the dorsal papillæ; excretory orifices on the right side; skin smooth, without spicula; no distinct mantle.

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ÆOLIS* HUSSEYI. *Kel.*

Tentacles 4. Both pairs of the same shape and form ; but the anterior ones longer, of a limped-orange hue, tipped with white. Back of a dull orange-brown colour ; a triangular white space behind dorsal tentacle. Branchiæ numerous, in 3 rows on each side of body, white and ringed with light purple, tip white. Foot dilated anteriorily ; no lateral processes.

Rare; named in memory of a departed and beloved companion of my earliest scientific labours.

ÆOLIS BICOLOR. *Kel.*

Body $\frac{3}{8}$ inch long, slender : waxy-white ; a dusky spot on neck anterior to dorsal tentacles. Dorsal tentacles short, smooth, transparent white at base ; corrugated or laminated at apex, of a deep orange-red colour, becoming darker at tip. Oral tentacles twice as long ; pellucid-white throughout ; tapering, curved. Head small, rounded. Branchiæ medium sized ; narrow, acutely pointed ; white with a subterminal orange-red ring ; apex waxy-white. They are set in 6 or 7 small clusters, the anterior ones composed of 34 or more branchiæ ; the others of two, rarely of three ; becoming smaller as they approach the tail. Foot linear ; white, transparent ; slightly expanded in front.

Found among sea weed in Back Bay, Trincomalie.

ÆOLIS EFFULGENS. *Kel.*

Tentacles 4 ; 2 dorsal moderately long, laminated obliquely ; dark-orange, tipped white. The two anterior ones orange, with a whitish spot in centre and tipped white, a dark shade behind dorsal tentacle. Branchiæ in 5 or 6 clusters on each side of back. The anterior clusters consisting of 12 or 15 narrow

* *Etym.* *Æolis*, daughter of Æolus

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obtusely pointed branchiæ; orange-red at base, ringed with white and orange, tip white; a bluish line running longitudinally for nearly two-thirds of its length.

Found in great number in Dutch Bay, and other parts of the sea near Fort Frederick. Spawns in June and July. Ova white, in narrow thready coils.

ÆOLIS PAULINÆ. *Kel.*

Tentacles 4; two dorsal, red, wrinkled. The two terminal tentacles pinkish, tip red, base white. Branchiæ reddish, numerous, short; anterior ones have a whitish central ring, tipped red; posterior ones of a redder colour, tips more broadly tipped with red; the central white ring less distinct. Foot expanded, with a short, triangular-pointed process. Dength 3½ lines.

ÆOLIS TRISTIS. *Kel*

Tentacles 4; two dorsal, about half the size of the two anterior ones; white with blackish rings. Body white, an interrupted blackish line on each side of back. Branchiæ in clusters of 3 or 4; short, pointed, white, and ringed with black. Foot slightly expanded, and notched anteriorly. Length about 3 lines.

Found on sea-weed in one of my Aquaria. Ova white.

ÆOLIS NODULOSA. *Kel.*

Tentacles 4; opaque-white. Dorsal long, pyramidal, pointed, with three nodular rings; oral tentacles short, narrow, pointed, white with a yellowish shade. Head and back white. Branchiæ in five small clusters on each side; long, nodular, obtusely pointed; opaque-white and spotted indistinctly with slight orange-brown; base darker. Foot slightly contracted anteriorly.

Length about ½ inch.

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Æolis Smedleyi. *Kel.*

Dorsal tentacles pyramidal, ringed ; of a dusky grey colour. Oral tentacles long, pointed, white, with a central red ring. Branchiæ in five small clusters on each side ; the anterior pair largest. Papillæ short, conical ; white, and ringed with grey. Foot long, with anterior tentacular processes Length 4 or 5 lines.

I have named this species in remembrance of one who was a frequent visitor of my "Aquarian establishment," and who took a warm and friendly interest in all my scientific pursuits. This small *Æolis* was discovered on some sea-weed growing in a Vivarium.

Genus. Proctonotus. *A. and H.*

Animal oblong, depressed, pointed behind ; dorsal tentacles 2, linear, simple, with eyes at base, behind ; oral tentacles short ; head covered by a small semi-lunar veil ; mouth with horny jaws ; gills papillose, on ridges down the sides of the back and round the head in front ; vent dorsal.—*Woodward.*

Proctonotus Orientalis. *Kel.*

Animal semi-gelatinous, grëenish. Dorsal tentacles 2, bifurcated and retractile. Oral tentacles short, pointed. Branchiæ, four or five rows on each side of body, those nearest the body smaller ; wedge-shaped, rounded superiorly, flattened ; green, spotted grey and green. Branchiæ carried round the head in two or three rows ; middle ones longer, all of the same shape. Foot broad, long, grooved in foot. Length 2½ inches. Ova white, in waved thread-like coils.

This exceedingly interesting animal may perhaps occupy a new generic place, as I do not observe the *bifurcated dorsal branchiæ* noticed in the other species of the genus *Proctonotus*. When coiled up it looks like a flower, with green petals.

Found in Trincomalie, in May and July.

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PTEROCHILUS VIRIDIS. *Kel.*

Animal light-green. Length ½ inch. Tentacles 2, simple, long, pointed. Head with small lateral lobes. Branchiæ very numerous, closely set ; long, linear, acutely pointed. Branchiæ green, and spotted with darker green and grey. Foot linear. Found on sea-weeds, and, owing to its colour, not easily recognised. Lives for a long time in confinement. Ova green.

Fam. ELYSIADÆ.

Genus. ELYSIA. *Risso.*

Animal elliptical, depressed, with wing-like lateral expansions ; tentacles simple, with sessile eyes behind them ; foot narrow.

ELYSIA GRANDIFOLIA. *Kel.*

Head and body light-green, white, and occasionally black spotted. Head and neck naked. Tentacles 2, folded longitudinally, on side of head ; bronzed-green, tip brown. Buccal tentacles 2, small. Membranous wing-like expansion on each side of body ; broad anteriorly ; acutely pointed posteriorly, and united at the tail. Membrane green, edged with a black and a golden yellow line. No distinct foot. Orifice on the back (?). Mouth beneath.

The whole animal gives one the idea of a large leaf ; and, when moving, that of a butterfly. Found on sea-weed. Some are more than 3 inches long ; greatest transverse diameter, with wings expanded, 2½ inches. Distinct veins, filled with fluid seen on the wings ; the heart pulsating on the centre of the back. I have some doubts as to the propriety of placing this interesting creature under the head of *Elysia.* If on further investigation, it is found that it does not belong to any known genera, I propose naming it HYDROPSYCHE.

ELYSIA PUNCTATA. *Kel.*

Smaller than the last species ; largest specimen seen measuring 1½ inch.

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Animal of a lighter green colour. Tentacles dark-brown, spotted white. Back whitish-green, dotted with black and green, and spotted like the back. Edge of mantle black, and shaded with golden ; under surface of wings tubercular and dotted black.

Found on sea-weed. Not easily distinguished from the young of *E. grandifolia.*

ELYSIA CŒRULEA. *Kel.*

This is a very small, beautiful species, about ¾ inch long ; when the wings are folded, it is not thicker than a crow's quill. Tentacles 2 ; blue, with a central red ring, tip blackish. Body and wings blue ; under part of head, and fore part of foot, red ; edge of wing lined with black and red lines, the latter outermost.

Found on sea-weed, in the Inner Harbour. All three species have the same generic characters, and doubtless belong to the same genus.

Order. INFERO-BRANCHIATA.

Genus. PHYLLIDIA. *Cuv.*

Animal oblong, covered with a coriaceous tuberculated mantle ; dorsal tentacles clavate, retractile into cavities near the front of the mantle ; mouth with two tentacles ; foot broadly oval. Gills forming a series of lamina extending the entire length of both sides ; excretory orifice in the middle line, near the posterior end of the back, or between the mantle and foot ; reproductive organs on the right side ; stomach simple, membranous.

PHYLLIDIA ZEYLANICUS. *Kel.*

Mantle tubercular ; salmon coloured ; three continuous black lines run round the whole length. The internal one broader,

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taking within its circuit the dorsal tentacles and anal orifice; two other lines run parallel to this all round the mantle; the outer one narrowest. Dorsal tentacles large, conical, pointed; circularly laminated at the upper half, which is of a black colour. The two oral tentacles small, black. Foot whitish, notched in front; the blackish viscera seen through. Branchiæ whitish on sides of the body except in front. Anal opening on a black coloured tube, behind which there are four or five large tubercles of the same form as those on the other parts of mantle. Length 1 inch; ⅛ inch broad.

Very rare.

Genus. DIPHYLLIDIA. *Cuv.*

Syn. LINGUELLA. *Blain.*

Animal oblong; mantle ample; gills limited to the hinder two-thirds of the body; head with minute tentacles and a lobe-like veil; vent at the right side, behind the reproductive orifices? lingual teeth 30. 1. 30.

DIPHYLLIDIA FORMOSA. *Kel.*

Body pink. Mantle leaf-like; dark-purple, with purplish black shades; edge yellow, streaked longitudinally with golden yellow, broad lines alternated with very delicate narrow ones. Veil purple-black, except the anterior edge; beneath, of a lively pink colour. Foot pink, grooved in the median line of posterior half. Branchiæ buff; a whitish spot on anterior third of plumes. Dorsal tentacles emerging through notches on anterior edge of mantle; tentacles red with blackish tips and sides. No oral tentacle. Length 2½ inches, 1¼ inch broad.

This very beautiful species is found in deep water. It occasionally buries itself in sand, with only the head and tentacles exposed, and lies for hours in this position.

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Order. TECTI-BRANCHIATA.

Animal usually provided with a shell both in the larva and adult state ; branchiæ covered by the shell or mantle ; sexes united.

Fam. · PLEURO-BRANCHIDÆ.

Genus. PLEUROBRANCHUS. *Cuv.*

Animal oblong, fleshy, convex above with a very large and overspreading mantle. Foot large, equally outspreading, and thus leaving a wide canal all round the body. Head distinct, furnished with a veil, uniting on each side with the borders of the foot, and with two tubular tentacles, which are split anteriorly ; mouth at the extremity of a proboscis ; branchiæ composed of a double row of lamella, forming a plume on the posterior right side, between the mantle and the foot. Anus carried by a small tube behind the branchiæ. Organs of generation in front. Shell sometimes rudimentary, membranous, with a tolerably distinct apex hidden in the thickness of the mantle.—*Woodward.*

PLEUROBRANCHUS CITRINUS? *Ruppel.*

Orange-red ; mantle darker than the other parts of the animal, and speckled with whitish spots. About 1 inch in length. Ova reddish, in circular broad coils.

Very common in Trincomalie. Found in low-water, on coral stones and sea-weed, nearly throughout the year. Spawns in May, June and July.

PLEUROBRANCHUS RETICULATUS? *Gmel.*

Pale orange-red, reticulated mantle, and spotted purple.

About 2 inches long. Found near Fort Frederick, Trincomalie, in shallow water among rocks.

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Pleurobranchus Zeylanicus. *Kel.*

Pale yellow, splashed with darker yellow and brown, and minutely spotted with rusty-brown.

About 2 inches long.

Rare ; found in Rock bay.

Pleurobranchus purpureus. *Kel.*

Deep reddish-purple Mantle very dark-purple, and spotted with still darker purple. There is a bright white zig-zag line on each side of the back of some large specimens. Length nearly 6 inches ; 4 inches broad. The young is of a lighter purple, and may be mistaken for another species.

Found in deep water, Trincomalie.

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CEYLON ZOOPHYTES.

RADIATA.

Order. POLYPI.

Fam. ACTINIADÆ.

Animal single, fleshy, elongate or conical, capable of extending or contracting itself, fixed by its base, but with power of locomotion, mouth in the middle of the upper disc, very dilatable, surrounded by one or more rows of tentacula ; oviparous and viviparous ; marine.

Genus. ACTINIA. *Linnæus.*

Body conoid or cylindrical, adhering by a broad base ; the space between the mouth and the rim of the upper disc occupied by one or more uninterrupted series of conical, undivided tubular tentacula, which are entirely retractile.

ACTINIA WARDII. *Kel.*

Body large, greenish-yellow, except the upper half, which is of purplish colour and tuberculated ; the other parts nearly smooth, indistinctly streaked. Disc buff, with darker radiating lines. Tentacles in two or three rows, about 1 inch in length, narrow, pointed obtusely ; whitish ; base purplish, tip bright crimson, transversely striped with grey or dark buff.

Height 2½ inches. Breadth nearly 2 inches, when expanded.

Found in deep water on the oyster banks at Cottear, opposite Fort Frederick.

This handsome species I have dedicated to Sir Henry Ward, Governor of Ceylon, under whose auspices I have been enabled

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to prosecute my researches among marine animals, with more than ordinary success.

ACTINIA TRANCHELLI. *Kel.*

Body short, longitudinally striated with pale-green, alternately with lines covered with yellow and white tubercules, small ovular granules round edge of disc. Disc circular, cup-shaped; greenish and rayed with four or five white lines. Tentacles about an inch long, set in two rows, narrow, finely pointed, pellucid, and spotted with opaque, oblong, white and purplish spots; 1½ inch high and ¾ inch broad. The inner row of tentacles generally erect, and the outer curving over side of body.

Found in Dutch Bay. Named in compliment to Miss Tranchell, of Trincomalie.

ACTINIA PUDICA. *Kel.*

Body opaque-white; irregularly striated and spotted with light-crimson. Tentacles few, pellucid-white; short, conical; set in two or three rows. Disc pellucid, and streaked with milky-white.

This elegant anemone, when detached, floats on water like a globe, and may be taken for a species of the genus *Mayas.*

Found on small stones in Back Bay, Trincomalie.

ACTINIA PASSIFLORA.

Body semi-carneous, brown. Tentacles few; short, stout, truncated, or capped (?); purplish-white, the longer five or six have dark-purple base and rings.

This may be a species connecting *Capnia* with *Actinia.* Height 1 to 1½ inch; ⅝ inch broad.

Found near Sámi Rock.

ACTINIA REFULGENS. *Kel.*

Small, the largest seen scarcely one inch long; body white, translucent; tentacles short, in two rows; brown with golden spots.

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Found on stones in Back Bay, Trincomalie.

Resembling a *Zoanthura*, but the clear diaphanous body and the disunited tentacles, at once show this creature to be an *Actinia*.

Actinia vermicosa. *Kel.*

Very small. Body 3 lines in diameter and 4 lines in height; whitish-pellucid. Tentacles from twelve to eighteen, small, worm-like; golden-yellow or dark yellow-brown. Very viscid. When the tentacles are withdrawn this little creature looks like the larva of an insect; oblong globuse, with a golden coloured head.

Actinia fluctuosa. *Kel.*

Body pale, flesh-coloured; indistinctly longitudinally striated, with white spotted lines; several rows of pale-blue granules near edge of disc.

Disc waved, tubercular, forming sometimes in triangular or quadrangular masses, at other times circular; centre of disc pale, the rest white with radiating lines.

Tentacles numerous, in three rows, pale-brown, occasionally greenish-pellucid. The number on inner row fewer; extreme point white.

Height 1 inch. Breadth 1¼ inch.

Found in Back Bay, Trincomalie.

Actinia samaragdana. *Kel.*

Small, disc of a beautiful bright emerald-green, with white lines or radiating rays. Tentacles numerous, set in three rows; short, oblong, semi-conical, obtusely pointed; white at the base; beyond this, purplish-brown, the rest very pellucid, dashed with purplish and white spots.

Body flesh-coloured, longitudinally striated. Two or more rows of pale-green rounded tubercules, on discal margin, inferior to outer rows of tubercules; at times these granules are of a white colour.

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About 1 inch in diameter, and ¾ inch high. Found in deep water, Inner Harbour.

Actinia Austinii. *Kel.*

Body rounded, thick, reddish ; covered with brick-red tubercules. Disc pellucid-white, or reddish. Oral opening 1¾ inch in diameter, margin surrounded with tentacular-like bodies in two or three rows. Tentacles numerous, in four rows ; nearly 2½ inches long, narrow, acutely pointed ; pellucid-white, spotted on the inner side. Stands 2½ inches high.

This large anemone is found in great abundance on the rocks near Fort Frederick in the months of May and June. Some, entirely free of the brick-red colour, are of a pale greenish-white ; others, have the disc one half purple and the other half grey. It adheres to the finger.

I have named this species in remembrance of a valued friend, who was one of the founders of the Ceylon Military Medical Officers' Museum,—Dr. Austin, late of the 97th Regiment.

On my recent visit to Colombo, I obtained many specimens of a smaller anemone from Mutwal rocks, closely resembling this species, but with short tentacles, and without the adhering qualities of the foregoing species. I am inclined to believe this to be a distinct species. Colours very changeable.

Genus. Anthea.

Body cylindraceous, adhering by a broad base ; tentacula disposed in circles round the mouth, elongated, tapered, and incapable of being retracted within the body.

Anthea Indiana. *Kel.*

Body transparent, almost colourless, globose at base, elongated ; a few white spots near disc. Tentacles long, delicate, finely pointed, set in two rows on the edge of a greenish transparent disc. The inner set of tentacles more than twice as long as the external row. Tentacles pellucid, indistinctly ringed, alternately with grey and white. Oral opening

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surrounded with an elevated hexagonal ring, taking the form of a cup, on the centre of which is the transverse slit of the mouth.

This parasitical anemone is found on Pearl Oysters, in the Harbour of Trincomalie. It grows very rapidly in the Vivarium, and is a good guide for ascertaining the quality of the sea water in which it is placed. When the water is impure, or any animal in it dead and decaying, this *Actinia* shrivels up and assumes a dark-brown or blackish colour, and as the water is purified the creature regains its pellucid form.

Anthea arachnida. *Kel.*

Resembling the *A. Indica*, but much smaller, and the disc is spotted black. The tentacles worm-like ; pellucid-white, and spotted dusky. Found on rocks and shells.

Anthea aurea. *Kel.*

This is a very minute species ; when elongated, nearly one inch high, and scarcely four lines in breadth. Body pellucid, tentacles few, short ; golden-yellow.

Found on rocks and shells.

Anthea meleagrina. *Kel.*

Body short, broad, greenish, translucent, slightly tubercular. Tentacles numerous, of moderate length, narrow, pointed ; greenish-brown, with darker brown rings. Mouth slightly elevated. Disc pale-green.

Height ½ inch. Breadth 1¾ to 2 inches when expanded.

Found in the Inner Harbour, in deep water, adhering to Pearl Oyster shells.

Actinodendron argentea. *Kel.*

Body white. Disc granular, frosted white. Tentacles short, acute ; silvery-white, transverse granulated lines on inner surface; short pinnules on sides.

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Height ½ inch, breadth 1 inch. Very rare. Found in deep-water.

ACTINODENDRON ZEYLANICUS. *Kel.*

Body large, semi-gelatinous, yellow or buff, longitudinally streaked, alternately with lines of pearly tubercules. Disc broad, cup-shaped, greenish-brown, or purple, with numerous radiating lines of various colours ; granular. Tentacles purplish-brown ; numerous, in three or four rows ; broad, long, pointed, crossed on superior surface with white lines, which are laterally tubercular, or slightly pinnated. A row of large oval bodies on edge of disc. Height of the largest specimen seen 3½ inches. Breadth 3 inches. Tentacles 1 to 1¾ inch long, all of nearly equal length.

This handsome arborescent anemone is found on rocks in the Inner Harbour, in two or three feet of water.

ACTINODENDRON HOROLOGIA. *Kel.*

Body white, with pinkish streaks. Disc depressed, circular, pale-brown, granular ; a broad pale purplish circle, about midway between oral opening and tentacles, and on this ring are twelve broad purplish streaks, placed equidistant. Tentacles in three rows ; short, flattened, pointed ; those nearest the oral opening larger. All have tubercular granules, placed in transverse rows, from six to eight in number. Tentacles yellowish, a few white granules near edge. White tubercular lines placed in longitudinal rows on surface of body. Body when elongated about 2¼ inches high.

Found at Trincomalie, on small stones, in low-water.

ACTINODENDRON VIRIDIS. *Kel.*

Body white, with greenish streaks and rows of white granules. Disc depressed, greenish ; ¾ inch in diameter. Tentacles short, acutely pointed ; granulated on edge ; set in two rows. Those nearer the disc shorter, a row of larger white-spotted granules on edge of disc.

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In height 2½ inches ; narrow at middle and base. Trumpet-shaped above.

Distinguished from *Horologia* by the absence of the purple zone on disc, and from its longer tentacles. The tubercules too are less swollen, and there is a more marked space running longitudinally on tentacles.

Found with its body buried in sand in the Harbour of Trincomalie.

DIOSCOSOMA (ACTINODISCUS) ? ZEYLANICA. *Kel.*

Body thick, short; pinkish, minutely punctulated with bright-red ; near the disc the body is streaked longitudinally with closely spotted purplish lines. The body is expanded into a cup-like disc, of a bright vermillion-red colour, with radiating white lines. Disc broad, expanded, and covering the whole body, surface covered with small lines (three or four,) short, conical, truncated, tentacles, disposed in rays, running from oral opening to edge of disc, alternated with shorter ones which proceed from middle-third of disc with two other shorter ones, on each side, and the whole terminate at the margin in close compact rays. On each side of oral opening, is a semi-globular body with a central foramen, which communicates with the oviducts.

The colours of this singular form of anemone vary much ; at times, it is all of a purplish-brown with greenish reflections, on other occasions the uncovered space of disc is of an earthy-brown colour, or green, and the rays of tentacles either entirely, green, or maculated with purple and white.

Breadth or disc when expanded from 4 to 5 inches.

If this anemone is to be considered of a genus distinct from *Actinia*, I think of reinstating the generic term of *Actinodiscus*, given to a much smaller creature by M. Blainville, for it also, like the species of Leuckart's *Dioscosoma*, has two discs, and the animal, when waiting for its prey, is not unlike a depressed hour glass in shape. It can withdraw the superior disc within, when the red-spotted body is seen to be of a club-shaped form.

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PEACHA GOSSEI. *Kel.*

Body semi-carneous, covered by a brownish skin, corrugated, narrow and long. Tentacles from nineteen to twenty-one, long, narrow, and acutely pointed ; either of a green colour, or purple, marked on superior surface with transverse blue or white lines, some of which are narrow-shaped. Mouth on a conical eminence. Inferior opening giving passage to ova and excrementitious matter. Length 4 or 5 inches, and about $\frac{3}{4}$ inch broad at base, when elongated. Very active in springing ; it can adhere to sand or stones.

This is, I believe, the second species known of Gosse's new genus *Peacha.* I have dedicated it to the original describer of the genus. Mr. Gosse's description led me to observe this species very closely, although I was at first induced to consider it a species of *Edwardsia*. The inferior orifice admits of the passage of a moderate sized probe. The oral orifice has not that foliated appendage described by Gosse. It is for him to determine whether this is a generic character.

ZOANTHURA.

ZOANTHURA, sp.—green disc.

Z. MAMMALIFERA.—brown disc.

Being now on the eve of embarkation for India, I have only time to notice the above two species of Zoanthura, which I trust will be described by other naturalists who may succeed me.

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CEYLON ENTOZOA.

Order. PARENCHYMATA.

This order includes all those *Entozoa* which have the body filled with a parenchyma, or pulpy matter, either in a cellular tissue, or simply in the cavity, in which there is no alimentary apparatus to be discovered, except a few canals, which carry nourishment to all these parts. The ovaries are also imbedded in the parenchyma ; there is no abdominal cavity, no intestine, and no vent ; and the signs of a nervous system are few and doubtful.—*Cuv.*

Fam. TREMADOTEA.

Have the under part furnished with cup-like discs, or suckers, by which they adhere.

Genus. PLANARIA.

Body flattened, depressed. Like the *Flukes* (which infest the liver of sheep), they are bi-sexual. Very voracious, and will even feed upon their own species. They multiply rapidly in the ordinary way, and also by division of the body—even spontaneous division as is alleged. Mutilated parts are also very readily reproduced, and a partial division of the body, will even produce an animal with two heads or two tails, according as the anterior or posterior end is cleft. Several species inhabit the fresh waters, but larger ones are met with on sea shores.—*Cuv.*

The species herein described are all marine, found on rocks and sea-weeds in the harbour and bays of Trincomalie. They are exceedingly interesting creatures, some rivalling the tribe of *Dorididæ* in colours. They live for a long time in the Vivarium. The mouth, situated in most of the species near the anterior third of under part of medial line, opens and dilates like that of a sea-anemone. Ova of most species white, deposited in thin flakes on rocks and sea-weed.

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Further investigation will, I believe, lead me to separate the species into more than two genera; the majority of species correspond with M. Dugé's *Derastoma* in which there is one opening, nearer the anterior edge than in *Planaria* The presence of tentacles, or rudimentary ones, on the anterior edge, or on the back, will also perhaps form a generic distinction. I have attached the species without any appearance of tentacular appendages to a new genus (*mihi*), *Penula*. The mouth too in this genus is placed nearer the centre of under part.

PLANARIA CEREBRALIS. *Kel.*

Rudimentary tentacles anterior, formed by two folds of the margin. Upper surface of a yellowish-brown colour and minutely streaked with fine wavy brown lines; border lined with a black line, streaked with white. Beneath, of a beautiful salmon colour. Mouth large, placed on the anterior third of lower part of body; lips white.

This is the largest species observed, nearly 3½ inches long, and 3 inches broad. Ova greenish-white.

PLANARIA VIOLACÆA. *Kel.*

Tentacles, as in last species. Upper surface violet-purple colour, edged with bright-yellow. Median line yellowish; under parts rose coloured.

About 1¼ inch long, and ¾ inch broad. This beautiful species, in a quiescent state, resembles some variety of pansy. Ova yellow.

PLANARIA VIRIDIS. *Kel.*

Tentacles folded; green, spotted brown; edge dark grizzly brown. Under parts paler.

About 1¼ inch long.

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Planaria armata. *Kel.*

Tentacles folded, but more distinctly formed. Upper surface of a dark-purple colour, covered with short, black spines. Beneath pale-purple, smooth. About 1½ inch long, and nearly 1¼ inch broad.

Planaria papilionis. *Kel.*

Tentacles as in last species, black, white tipped. Upper surface yellow, covered with small black spines. Beneath pale-yellow. Margin whitish.

Length about 1 inch.

Very like a butterfly moving in the water.

Planaria purpurea. *Kel.*

Tentacles rudimentary. Upper surface of a beautiful purple-colour; beneath paler purple.

About 1½ inch long.

Planaria fusca. *Kel.*

Upper surface dusky-brown. Beneath paler brown.

About 1½ inch long.

Planaria elegans. *Kel.*

Tentacles red, situated on the anterior third of mantle, Upper surface pale-yellow, shaded with greenish brown, black dots; margin black, lined with orange. Beneath whitish.

Length 1¼ inch.

Planaria thesea. *Kel.*

Tentacles white, with red tips, rising from depressions, or cups, placed near the middle third of body. Upper surface of a chocolate-brown colour, edge yellow. Mouth in the middle, below genital organs. Beneath pale-purple.

Length 1½ inch.

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Planaria striata. *Kel.*

Tentacles rudimentary. Upper surface brownish-purple, streaked with brown. Beneath pale orange-brown.

Length 2⅛ inches.

Planaria meleagrina. *Kel.*

Tentacles of an oval form. Medial line reddish, edged with a black line, the rest striped with broad white and light purplish streaks; margin waved and edged with black. Length 1¾ inch. There are two linear appendages on neck, above eye spots.

Planaria undulata. *Kel.*

Tentacles rudimentary. In medial line purplish, the rest pale-yellow, with undulating lines and spots of purplish-brown; margin purplish. Length 2 inches.

Planaria aurea. *Kel.*

Tentacles two, simple; pointed, rising from the anterior third of body. Upper surface golden and speckled with white and brown.

Nearly 2½ inches long.

No drawing made of this species.

Planaria dulcis. *Kel.*

Tentacles rudimentary. Body brown in the medial line, the rest light-green, minutely spotted with reddish brown. Margin white.

Length 1 inch.

Planaria Zeylanica. *Kel.*

Tentacles rudimentary. Upper surface of a dark purplish chocolate colour; margin white, with an internal adjoining orange and black line. Beneath paler.

Length 2½ inches, and 1½ inch broad.

Very abundant in months of May and June. Ova white.

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Genus. PENULA, *n. g.* *Kel.*

Animal gelatinous, flattened like *Planaria*, but without any appearance of tentacular appendages. Mouth placed beneath, near the central third of body. Eye spots on anterior third ot back.

Ruppel figures one species of this form in his work on Abyssinia.

PENULA OCELLATA. *Kel.*

Upper surface pale yellowish-brown, with dark-brown ocellated spots. Beneath, pale-buff. Length 2 inches.

PENULA PUNCTATA. *Kel.*

White. Above minutely punctulated with reddish-brown. About 1¾ inch long.

PENULA FULVA. *Kel.*

Yellowish, striated transversely.

Length 2½ inches.

PENULA ALBA. *Kel.*

White throughout.

Length 1½ inch. Narrow. Ova of all the species whitish.

Several other species, I have no doubt, will be yet obtained from Ceylon.

As these pages are going through the press, I have returned from Calcutta, and I am now preparing for the Pearl Fishery at Aripo, where I hope to obtain many curious forms of *Zoophytes*.

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ACCOUNT OF THE WORKS OF IRRIGATION CONSTRUCTED BY KING PARÁKRAMA BÁHU, CONTAINED IN THE SIXTY-EIGHTH AND SEVENTY-NINTH CHAPTERS OF THE MAHÁWAṆSO, WITH INTRODUCTORY REMARKS.

By Louis De Zoysa, Mudaliyár.

The following extracts from the Maháwaṇso, having reference to works of Irrigation executed in the reign of Parákrama Báhu I., (A. D. 1153—1186), may not prove altogether devoid of interest, in connection with the very able and interesting Papers on the subject of ancient irrigation in Ceylon, recently published by order of Government. The Sovereign alluded to is the celebrated Parákrama Báhu the Great, the constructor of the "Sea of Parákrama," the invader of India and Burma; and whose reign Mr. Turnour characterizes as "the most martial, enterprizing, and glorious in Siṇhalese History."

The first extract is the 68th Chapter of the Maháwaṇso, and contains an account of the efforts made by Parákrama Báhu to promote the cultivation of rice, on his assuming the government of the *Pihiṭi-raṭa** under the title of *Mahádi*

* The ancient divisions of Ceylon were :—*Pihiṭi-raṭa*, bounded on the west, north, and east, by the sea; on the south by the Maháwęli-gaṇga, and Dęduru-oya rivers; it was also sometimes called *Rája-raṭa* as the ancient capitals were situated in it: *Ruhuṇu-raṭa*, bounded on the west and north by the Máhawęli-gaṇga, and Kaḷu-gaṇga (or Kaḷutara) rivers, and on the east and south by the sea. The mountainous portion of it was called *Malaya-raṭa*: *Máyá-raṭa*, bounded on the north by the Dęduru-oya, on the east by the Maháwęli-gaṇga and the mountains, on the south by the Kaḷu-gaṇga, and on the west by the sea."—Turnour's Ceylon Almanac, 1834, p. 57.

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pádo or sub-king. The second extract is a part of the concluding Chapter of the reign of the same monarch, and gives a summary account of the principal public works executed during his government. It consists of 87 verses, of which the first 24 relate to the formation of extensive gardens and plantations ; the next 26 to the construction of tanks and canals ; and the last 27 to the erection of various public buildings, such as dágabas, image houses, preaching halls, inns or houses for strangers, libraries, theatres, &c. I have only translated the verses relating to tanks ; those which have reference to canals and water-courses having already been translated and published by Mr. Turnour in the Ceylon Almanac for 1834.

I have not thought it necessary to add any comments of my own, by way of illustrating the translation ; but I may perhaps be permitted to say a word in reference to the information which a pássage in the first extract gives respecting the "Sea of Parákrama," to which so much attention has lately been drawn by the publication of that valuable contribution to the ancient history of Ceylon,—the "Report on the Ellahara Canal, by Messrs. Adams, Churchill and Bailey."

As stated by these gentlemen, "the situation of the 'Sea of Parákrama' has never hitherto been satisfactorily ascertained."

Turnour states (*vide* Ceylon Almanac of 1834, p. 68) that "the 'Sea of Parákrama' with its embankments of many outlets is yet unknown, or at least unnoticed."

Major Forbes indeed surmised that the series of lakes connected by the Ellahara Canal, might be the waters to which the vanity of a King gave his own name, but he adds, that "until this canal shall have been traced through the Konduruwawe hills, the extent and difficulty of such an undertaking must excite doubts whether it were successfully accomplished."

The explorers of the Ellahara Canal were, however, the first who declared their belief, that the series of tanks connected by this canal were the waters which bore the name of the "Sea of Parákrama."

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It does not, however, appear that this opinion is corroborated by the Maháwaṇso, since in a passage in the 68th chapter, mention is made of a particular tank, which was afterwards called the "Sea of Parákrama."

The passage alluded to is the following :—

> අතිඃ ඛුද්දකං පුබ්බෙ පණ්ඩවාපිඤ්ච කාරිය,
> සංවඩ්ඪිතුච්චතායාම විත්ථාරත්ථිරපාලිකං
> අබ්භුන්නත මහාවාරි පාතං සජලනිග්ගමං.
> පරක්කම සමුද්දොති වොහාරඤ්චාභිරොපයි.

> Atíwa khuddakaṇ pubbé Paṇḍawápiñcha káriya.
> Saṇwaḍḍhituchchatáyáma witthráratthira pálikaṇ,
> Abbhunnata maháwáripátaṇ sajala niggamaṇ,
> Parakkama samuddoti wohárañchábhirópayi.

"Moreover, having made *Páṇḍa-wápi*" (Paṇḍa tank), which was formerly very small indeed, (into one) containing a body of water great and exceedingly lofty, having outlets for the water, and an embankment of greatly increased height, length, breadth, and strength, he gave it the name of the 'Sea of Parákrama.'"*

* [It is somewhat remarkable that the above important passage in the Maháwaṇso should have escaped Mr. Turnour's researches, since he gives the following account of the outlets from the "Sea of Parákrama," which is quoted by the authors of the Report of the Ellahara Canal. "The King [Parákrama] formed the deep canal called the Makara-gaṇga, which flowed from the Makara outlet of the sea of Parákrama ; from the same sea, the great canal Hema-watí flowing to the Mahá-megha-wana. From the outlet called Sámanmal, the canal distinguished by the name of Níla-wána : flowing from the outlet called the Kilá-karu-udyána the Salalawattí Canal : flowing from the outlet celebrated under the name of Waítra-watí, the Waitra-watí Great Canal : from the southern outlet, the Tuṇga-badsa Canal : flowing from the Maṇgala outlet, the Maṇgala-gaṇga Canal flowing from the eastern outlet, the Champa Canal ; flowing from the same sea to the Púrṇawardhana Tank, the Saraswatí Canal : flowing westward of that (Saraswatí) canal, the Weṇumatí Canal." No less than ten outlets are here enumerated, as formed by the King to convey, in different directions, the accumulated waters of the tank named after himself. Of these, four appear from their names and description to have been much larger than the rest. The identification of "the Sea of Parákrama," therefore, seems to depend upon the discovery, in Padavil-kuḷam, or any other of the large tanks, of ten outlets corresponding with those mentioned in the above extract.—*Ed. Ceylon Almanac*, 1857, in which work this article was by permission inserted.]

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I am not prepared to say what particular tank is meant by *Paṇḍa-wápi*, in this passage, as I have not been able to meet with any information, either in the Maháwaṇso or in any other work, which would enable me to identify it with any degree of certainty. The name *Paṇḍa-wápi* occurs but twice in the previous part of the Maháwaṇso. King Mahádáṭhiko Mahá Nágo is said to have bestowed the "*Paṇḍa-wápi Vihára*," i. e. 'the Paṇḍa Tank Vihára,' on a certain Sámaṇero, which proves the existence of a tank of that name so early as A. D. 8. (*vide* Turnour's translation of the Maháwaṇso, p. 214.) The next reference to *Paṇḍa-wápi* is in the 60th Chapter of the Maháwaṇso, in which it is mentioned as one of the tanks constructed, or prepared, by King Wijaya Báhu I.,* who reigned at Polonnaruwa A. D. 1071—1126. I am, however, inclined to think that we may recognize the *Paṇḍa-wápi* of the Maháwaṇso in the modern *Paḍavi*, or *Paḍavil-kuḷam* of the Wanni district.

The reasons which have led me to form this conjecture are, first, the similarity, or rather the identity, of the names; for the Páli word වාපි, *wápi*, and the Tamil word குளம், *kuḷam*, erroneously spelt *Colom*, both mean 'tank' so that in fact the Páli term *Paṇḍa-wápi* is an equivalent for the Tamil, *Paṇḍa*

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* As this part of the Maháwaṇso has not been translated into English, I annex a translation of the verses relating to works of irrigation in this reign.

"The tanks of Mahaheli, Sareheru, Mahá Danta, Kaṭunnaru, Paṇḍa-wápi, Kallagalla, Eraṇḍagalla, Díghawatthu, Maṇḍawáṭa, Kittaggabodhi Pabbata, Waláhassa Mahádáragalla Kumbhílasobbha, Pattapásána, and Káṇawápi, as well as many other tanks whose embankments had been in ruins, did the King build (and repair,) ever intent on the welfare of the poor. The ruler of the land having constructed embankments (to prevent inundation) in many rivers, streams, in various parts (of the Island) rendered the country abundant in food. Having also constructed the canal Tillawathu, which had been in ruins, he filled the tank of Maṇihíra (Minnery) with water."—*Vide* 60th Chapter of the Maháwaṇso.

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or *Paṇḍi-kuḷam,** which may have been corrupted into *Paḍavi* or *Paḍavil-kuḷam* ; secondly, the stupendous size and magnitude of the work.

Sir Emerson Tennent, who gives an interesting account of this tank in his work entitled "Christianity in Ceylon," calls it "*the largest as well as the most perfect of these gigantic works in Ceylon*," and speaks of it in such terms as would not be inappropriate in describing such a tank as the "Sea of Parákrama" must have been.

But the most interesting account, as well as that which gives us the loftiest ideas of this gigantic work, is that contained in the Governor's Minute on the Eastern Province.

His Excellency says : "It is the most wonderful work that I have yet visited, whether we look to size, difficulties of execution, or to the time at which these difficulties were surmounted..........North of these again, about 40 miles, is *Paḍavil-kuḷam, the most gigantic work of all*, for the bund, which is in perfect repair, (except at the one spot where in the course of ages the waters have forced a passage between it and the natural hills which it united,) is 11 miles long, 30 feet broad at the summit, 180 feet at the base, and 70 feet high......*Paḍavil-kuḷam*, the greater part of which I rode or walked over, was formed by the waters of the rivers Mora-oya and Muńgunu-oya, confined to the plain, by the enormous bund which I have just described. *Its construction must have occupied a million of people for 10 or 15 years.*"

The most satisfactory way of settling the question as to the identity of this tank, would probably be by obtaining a facsimile and translation of the inscription, to which Sir Emerson Tennent thus alludes in his note on the tanks already ...ed to.

...re of the existence of another "Great Tank" bearing the ...ṇḍi-kuḷam in the U'va district, but being situated in the ..., it could, I think, be scarcely regarded as the *Paṇḍa-wápi* ...wanso, if, as I infer from the context, it was constructed ... period, when Parákrama Báhu, was *Mahádi-pádo*, or king of

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"On the top of the great embankment itself, and close by the breach, there stands a tall sculptured stone, with two engraved compartments, that no doubt record its history, but the Uḍaiyár informed us that the characters were Nágari, and the language Páli, or some unknown tongue which no one can now read."

I have only to add, that my object in submitting the accompanying translation is by no means to advance any hypothesis of my own on this subject, but simply to put parties competent to decide on the point in possession of the data contained in the hitherto untranslated part of the Maháwaṉso, and especially to aid the investigations of those gentlemen whose meritorious labours have already invested the subject with so great an interest.

CHAPTER LXVIII.

This Sovereign of lofty aspirations, who was well acquainted with foreign countries, thus thought within himself :

"In what well-governed kingdom is the administration of affairs conducted without obtaining a knowledge of its means ?

"The object of my sovereignty is the advancement of the prosperity of Religion and the State, having vanquished all enemies. This kingdom, although very small, being filled with great prosperity, I shall by the superiority of my wisdom, soon bring into such a state as that it will surpass the greatness of other kingdoms.

"Conferring appointments on my officers, whose advancement is identical with my own, according to their respective merits rewarding them with honors and wealth ; causing my own people to settle in various parts within my dominions, from the mountain *Samanta-kúṭa* (Adam's Peak) as far as the sea coast, the cultivation of grain should be carried on in as many ways as possible."

Having thus reflected, the King thus addressed his officers :

"In my kingdom are many paddy fields cultivated by means of rain water, but few indeed are those which are cultivated by means of perennial streams and great tanks.

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"By rocks, and by many thick forests, by great marshes is the land covered.

"In such a country, let not even a small quantity of water obtained by rain, go to the sea, without benefiting man.

"Paddy fields should be formed in every place, excluding those only that produce gems, gold, and other precious things.

"It does not become persons in our situation to live enjoying our own ease, and unmindful of the interests of the people. And ye all, be ye not discouraged, when a necessary, but a difficult work is on hand. Regard it not indeed as a work of difficulty, but following my advice accomplish it, without opposing my instructions."

The highly renowned Monarch then ordered the construction of the great embankment celebrated under the name of *Koṭṭha-baddha*, which had long been swept away by the action of the river, leaving behind nothing but the name, and which indeed had baffled the attempts of former Kings to keep in repair.

Whereupon the ministers, one and all, represented in various ways the extreme difficulty of the work, and the instability of it, even if it could be accomplished.

The King rejecting their counsels, remarked:—"What is there that cannot be done in this world by men of perseverance? Is not the tradition still current that Ráma built a bridge over the great ocean itself, by means of monkeys?*

"If I am destined by fortune, to reduce this Island under one regal canopy, and to promote the welfare of the State and Religion, then, indeed, will the commencement of the work see the accomplishment of it also."

Thus did he of great courage inspire his ministers with courage.

Before the construction of the embankment, however, the profoundly wise ruler of the land made, from the mouth of the embankment, as far as the country of *Ratthakara*, a great canal of great breadth and strength, and of many *pórisas* † in depth.

The Protector of the land, having assembled a great many stone cutters, workers in metal, iron-smiths and gold-smiths in the country, and having

* In reference to the fable in the Rámáyaṇa, that Ráma, the conqueror of Ráwaṇa, in crossing over from India to Ceylon, caused a bridge to be built over the sea, by his army of Wánaras or monkeys. The reef of sunken rocks which extends across the Gulf of Maṇṇár from Rámisseram on the coast of Coromandel to Talaimaṇṇár on the coast of Ceylon, is supposed to be the remains of this bridge.

† "The measure of a man's reach.......Equal to the height, to which he reaches, when elevating both arms with fingers extended." (See Colebrook's *Amarakosha*, p. 160.)

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employed them in the work of cutting stones, got made by them an embankment of great stability and solidity, having the interstices of the stones invisible, like one continued sheet of rock, and having the work of plastering complete.

On the summit of the great embankment, the pious Rájá placed a *Bò* tree, an image house, and likewise a dágaba.

The King, by means of this canal, so directed the course of the stream as to make it discharge itself into the sea.

Having cleared the great jungle on both sides of the canal, he formed paddy fields of many thousands of Wáhas° of extent and converted the place in truth into a *Koṭṭhabaddha*, according to the literal meaning of the term, from the fact of its having *Koṭṭhabaddhas*,° 'perpetual granaries,' from the two Páli words *koṭṭha*, 'granary,' and *abaddha*, 'perpetual.'

Thereafter the King having dammed up the mouths of the rivers *Sankhawaḍḍhamáná*, and *Kumbhilawána*, as far as the *Súkara Nijjhara*† (literally 'hog-cascade,' or 'stream,'); and there too, having made a canal‡ and conducting the water into the tank of *Mahádáragalla*, thoroughly repairing, at the same time, the breaches thereof, including the clearing of the water-courses, (thus) brought it into a larger body of water than it had before, and having formed paddy fields from this place as far as the *Súkara Nijjhara*, collected paddy.

° According to the Páli Nighaṇḍu of Moggállana.

4 Nelis	make	1 Lahasa (or Kuruṇi	
4 Lahas	„	1 Droṇa	
4 Droṇas	„	1 Marika	
4 Marikas	„	1 Khári or Amuṇam	
20 Kháris	„	1 Wáha	

† This is no doubt the *Koṭṭa-vélla* of Brook. The Siṅhalese word, වෙල්ල, *vélla*, and the Páli word බඩ, *baddha*, both mean 'embankment.'

"From *Koṭṭa-vella* to Dástoṭa, a distance of 9 miles, the country is one of the most delightful I ever recollect seeing on this Island, nearly the whole distance a carriage might drive; there are strong marks of the plains and parts of the open country having been cultivated, it abounds in tanks and ravines to facilitate irrigation, all of which are neglected and broken. The reason the inhabitants assign for this, is want of people, and money to keep them in order. (Route from Mátale to Trincomalie, by way of the Ambaṅ-gaṅga, by R. Brook, Esq.)

‡ Instead of "යාව සූකර නිජ්ඣරං" "as far as the Súkara Nijjhara" some MSS. read "ඨානං සූකර නිජ්ඣරං" "the place Súkara Nijjhara." If this be the correct reading, the whole passage might be thus translated: "Thereafter the King having dammed up, at the junctions of the rivers Sankhawaḍḍhamána, and Kumbhílawána, the place called Súkara Nijjhara, &c."

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The King, moreover, having made a collection of water in the middle of the river *Jajjara* (Deduru-oya ?) and having formed paddy fields, collected vast quantities of grain.

Moreover, having made *Panda-wápi*, which was formerly very small indeed, (into one) containing a body of water, great and exceedingly lofty, having outlets for the water, and an embankment of greatly increased height, length, breadth and strength, he gave it the name of the "Sea of Parákrama."

In an island situated in the middle of it, on the summit of a rock* the King built a *Dhátu-gabbho* (Dágaba) resembling the peak of Mount *Kailása*.

In the middle also of the tank, he built a Royal Palace three stories high, and of superlative beauty : a palace indeed for the collected joys of the world.

The following, and many other ruined tanks and mountain streams did this benevolent monarch repair, in various parts of his dominions, viz., the tank of *Mahágalla*,† the tank of *Setthi*, likewise that of *Chhattunnata* the tank of *Tamba*, and the tank of *Ambawala*, the tank of *Giribá*, the tank of *Patala*, the tank of *Mandika*, the tank of *Mórawápi*, and the tanks of *Sadiyaggama* and *Tilagulla*, also the tank of *Malawalli*, the tank of *Kálikittakandaka*, the tank of *Kanikaragalla*, and the mountain stream *Buddhagama*, the tank of *Súkaragama*, ('the village of hogs,') the tank of *Maha-kirala*, the tank of *Giri*, and those of *Rakkhamana*, *Ambála*, and *Katunnaru*, the tanks of *Jallibáwa* and *Uttarála*, and that of *Tintinigama*, ('the tamarind village,') the tank of *Dhawalawitthi*, *Kira-wápi*, and *Nalannaru*, the tank of *Karawitthawilatta*, likewise that of *Dumbaragama*. The tanks of *Múnaru*, and *Salakas*, and also the tanks of *Múlawári*, *Girisigama*, *Polonnarutala* and *Wisiratthala*.

Draining up great marshes, in the country of *Panchayójana* (*Pasyódun*, or Pasdun-kóralé,) he formed paddy fields, and collected paddy.

Allotting lands for paddy cultivation in the jungles there, and in many other places, calling together the village chiefs, he caused the inhabitants to engage themselves in the cultivation of paddy.

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* I am informed by Mr. Braybrooke, who has visited *Padavil-kulam* that there is a rock in the embankment, called by the natives දෙවියන්නේ කඳ, *Deviyanné-kanda*, "God's Hill." or "King's Hill," which they believe is haunted by the spirit of King Mahasen, to whom tradition ascribes the construction of the tank.

† I have no means of ascertaining the Sinhalese names of these tanks. If we had a list of them in Sinhalese, we might probably identify most of them.

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In this manner, having augmented nine-fold the revenues of the State from what they were, the wise King caused the country to be so prosperous as never to know the calamities of famine.

He, who was so skilled in the maxims of Government, wishing that there should not be even a small spot of land within his dominions inhabited by men, which should be left unbenefited, formed many pleasant and delightful gardens and groves, full of fruit-bearing and flower-bearing trees and creepers of every variety, fit for the use of man.

Thus did this sagacious Ruler of the land, cause his small kingdom, which had attained prosperity, by the superiority of his wisdom, to surpass other great kingdoms in affluence.

The 98th chapter of the Maháwaṇso, entitled "the Advancement of the Prosperity of the Kingdom," composed both to comfort and to afflict righteous men.

Extract from CHAPTER LXXIX.

This supreme of men, for the purpose of averting the calamities of famine, constructed many tanks and canals in various parts of the Island.

Having turned the course of the river *Kara-gaṇga** by means of a great stone embankment, and having by means of a great canal, called *A'kása-gaṇga*, 'Celestial river,' conducted its broad stream to the Royal Palace, which was a noble one, resplendent like the sun,† he constructed the "King of Tanks," (*Wápi-rája*) celebrated under the name of the "Sea of Parákrama," which was like unto a second ocean, and which contained a perpetual supply of water.

He likewise built the great tank known by the name of the "*Lake of Parákrama*," having an inaccessible stone aqueduct of 100 cubits. Also the tanks of *Mahinda*, *Ekáha-wápi*, (literally) "the Tank

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* Major Forbes states that the river *Ambaṇ-gaṇga* is joined "by a considerable stream," called *Kaḷu-gaṇga*. Might not this be the *Káragaṇga* alluded to here? The Páli form of *Kaḷu-gaṇga* would be *Kála-gaṇga*, the only difference between it and *Kára-gaṇga* being the substitution of the letter *l* for *r*.

† Instead of, "which was a noble one, resplendent like the sun," ("වරභානුපුරදීපකං") some MSS. have "ආභාභානුපුරදීපකං," which may be translated "making a shining or splendid Island."

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of one day," the *Ságara* ('Sea') of Parákrama,* and the waterfall of *Koṭṭhabaddha*.

In many places, the chief of men, built minor tanks in number, one thousand four hundred and seventy-one. The Ruler of the land constructed conduits, and channels of stone, in no less than 300 tanks which had been in ruins.

The King also repaired many ancient tanks, such as the great tank of *Maṇihíra* (*Minnéry*,) the tank of *Maháddáragalla*, the tank of *Suwanna-tissa*, *Dúratissa*, and those named *Kála-wápi* (*Kaláwęwa*,) and *Bráhmaṇa-gama*. The tanks called *Nálikératthamba*, and *Rehéra*, likewise the tanks of *Giritalia*, and *Kumbhíla Sobbha*. The tanks of *Kana-wápi*, *Pádi* and *Kaṭigama*, the tank of *Pattapásána*, the tank of *Mahaṇṇa*, the tank of *Mahanámamattaka*, the tank of *Waḍḍhana*, and the tank of *Mahadanta*, the tank of *Kanagama*, and the tanks of *Wira*, and *Walahassa*, and that called *Suramána*, the tanks of *Pásánagama*, *Kálawalli*, and *Káhalli*, and those named *Aṇgagama*, *Hillapattakkaṇḍa*, and *Madagu*. These tanks which had been in ruins, did the King restore to their former condition, as well as others of less note, in number 467.

In about one thousand three hundred and ninety-five tanks, did the king, who was a proficient in matters of State, effect repairs and improvements.

[*For the remainder of this Chapter, see Ceylon Almanac, 1834.*]

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* This is either a clerical mistake, or there were more than one "Sea of Parákrama." While on this subject, I may here notice a very curious passage in the Rája Ratnákara, which speaks of the construction by Parákrama Báhu, of three great tanks known by the names "Mahá Samudraya," "Bana Samudraya," and "Mati" or "Mani Ságara."

This passage is translated by Upham as follows :—"The said king of Ceylon also rendered his fame great by causing to be made in Ceylon three great lakes, the first of which was called Mahá Samudra (*i. e.* allied to the sea,) and the third was called Męda Ságaraya (*i. e.* the middling sea.)"

It is however, right to add, that this passage is not found in the Saddharma Ratnákara, from which the author of Rája Ratnákara, has copied, almost verbatim, the events of this reign. Nor indeed is such a passage found in any other work on Ceylon, which I have seen.

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TOPOGRAPHICAL AND STATISTICAL ACCOUNT OF THE DISTRICT OF NUWARAKALÁWIYA.

By A. Oswald Brodie, Esq.

The district of Nuwarakaláwiya may be described as that portion of Ceylon which is included in the following lines :—

I. One running from a point one mile north of Dambulla to another about five and twenty miles west of Trincomalie.

II. A second from the last mentioned spot to the ninety-fifth mile post south of Jaffna.

III. A third running thence to within six miles of Arippu.

IV. A fourth proceeding thence south-south-east to a place about twelve miles west of Pomparrippu.

V. A fifth joining this last mentioned point with that near Dambulla.

The area of the district is about 2,900 square miles.

According to the last census returns (1852) the population is only 32,103, but this is manifestly erroneous, as there are 10,910 persons liable to the road tax, and the number of able bodied persons cannot well be more than one-fifth of the community. As all these returns are more or less erroneous, (giving the numbers too small, as the headmen persist in omitting numbers of women and children,) we may safely reckon the population at about fifty-five or sixty thousand.

The number of houses appear to be 9,804, which would give $3\frac{1}{9}$th persons to each house, but it must be observed, that headmen frequently apply the term "house" to a range of contiguous dwellings.

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The district on the whole is flat, not, indeed, flat in the same sense as the land near Mannár, Jaffna, &c., is flat, but it is not in any sense mountainous; the general surface consists of gentle undulations, and here and there isolated peaks or short ranges of hills appear. These are most common in lines north-east and south-west of Dambulla, and within twenty or thirty miles of that place, elsewhere they are of rarer occurrence and of less elevation. To the north, south, and south-west, of the station, hills entirely disappear. The southern part of the district forms in fact the extreme northern verge of the great central mountain mass of Ceylon, and the isolated hills are outliers thereof.

The whole face of the country, except where occupied by fields or tanks, is clothed by dense forest; and a large tract lying to the south, south-east, and south-west, of the station is almost uninhabited. This arises in part from a want of water, and in part, as has been remarked, from the policy of the ancient rulers of the Island, who interposed this barrier between themselves and the marauders who were wont to infest the maritime districts. There is yet another circumstance which probably has not been without its influence: I refer to the intense dislike which the villagers have, to contact with strangers. So strongly does this feeling still exist, that we have even now to take the greatest care not to bring roads too near to villages, as in this case the people invariably abandon their dwellings, and migrate to some neighbouring, but more secluded, spot.

The prevalent rock is gneiss, the colour and structure of which vary considerably in different localities. It is frequently traversed by veins of quartz and felspar; but no circumstance of interest connected with these has attracted my notice. This gneiss here, as elsewhere, has a tendency to exfoliate in layers concentric to the present surfaces, the plates which thus scale off are of all thicknesses, from two feet downwards. This peculiarity renders it a matter of ease to split off tolerably regular pillars and slabs, and there can be no doubt that this circumstance has had a very considerable influence on the character of the national or adopted architecture.

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Imbedded in the gneiss, at various places, one finds magnesian limestone, generally of a brilliant white colour and of a coarse crystalline structure ; occasionally it contains crystals of hornblende, and also orange-red spots, the composition of which I have not ascertained. The stone bears a good polish, and I am now trying it for flooring, a purpose for which it will, I think, be found well adapted, being clean, cool, cheerful looking, enduring, and ornamental. It is only within the last couple of years that the majority of the localities where this mineral occurs has been ascertained, and the discovery happened most opportunely, as numerous public works are in progress or contemplation. Hitherto lime has been brought from Arippu, a distance of forty-four miles.

In the early part of this year, I discovered in the bed of the Kalu-ár, about six miles east of "The Doric," a number of fossil shells and corals converted into a beautiful semi-transparent amber-coloured mass ; the associated nodules of variegated chert also contain numerous petrifactions and casts. I was unable to examine the beds at leisure, and therefore only obtained mutilated specimens, but judging from these, I should think that these limestone strata belong not to the present, but to the tertiary formation.

On a late circuit Mr. Quinton pointed out to me considerable quantities of a dark, heavy, metalliferous stone, which has all the outward appearance of furnace slag. The native tradition is, that it is the refuse from the forges of giants who lived of old ; but as I have since found it in many places, and as Mr. Quinton tells me that it is common over a large part of the Mullaittívu district, I am inclined to hope that it may be a natural product, and have instituted inquiries into the matter.

The soil of the district is generally of a reddish hue, occasionally intensely so, but, where liable to inundation, whether natural or artificial, it is darker and richer. Potter's clay is abundant, but so far as I know, none of it is adapted to the manufacture of the finer kinds of earthenware. The soil, on the whole, is not unfavorable to cultivation.

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There are no natural lakes nor thermal springs in the district, nor are there any perennial rivers. The following are the principal streams, which in the wet season contain large bodies of water.

1. The Dambulu and Mirisgóni-oyas, take their rise near Dambulla, and with some others of less importance, empty themselves into the great Kaláwęwa tank ; their united waters on leaving this assume the name of Kalá-oya, which for many miles forms the boundary between this district and Seven Kóralés, and ultimately falls into the sea near Pomparappu.

2. Kalankutti-ęla and Siyambalaŋgamu-oya, are tributaries of the former, which take their rise some fifteen miles west of Dambulla, and also form, for some miles, the limit between the same two first mentioned districts.

3. The Malwatu-oya ; one branch takes its rise from the great Éruwewa tank, is called there Gal-oya, and a little lower down Karunagala-oya ; a second branch rises from the foot of Riṭigala-kanda (the first hill in Nuwarakaláwiya) and joins the former a little to the east of the Central road. The united stream flows into the deserted tank of Náchcha-dúwa, which gives it a local name. Still lower down, that is, in the neighbourhood of Anurádhapura, the river is called Malwatu-oya, and flowing to the west-north-west falls into the Kanadará-oya, two miles south of Kappáchchi in the Maṉṉár district.

4. The Kanadará-oya, of which there are two great branches, the Saŋgili Kanadará, taking its rise in Kęndé Kóralé, and Mahá Kanadará-oya, in Kanadará Kóralé. These unite about three and a half miles west of the central road, and this united stream falls ultimately into the sea, near Arippu, under the name of Aruvi-ár or Pár-ár.

5. The Bú-oya or Pí-ár, rises in Kaḍawat Kóralé, forms for some distance the northern limit of this district, and finally joins the Aruvi-ár.

6. The Yán-oya has its source in the great Hurulu-węwa, and falls into the sea between Trincomalie and Kókilé, being known there as the Kallu-ár.

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Botany, &c.

Though the whole district is covered with jungle, the quantity of useful timber is surprisingly small. In fact this remark is applicable to Ceylon generally, to a much greater extent than many imagine. The fact is to be attributed, mainly, to the great development of the chena system of cultivation, which is hereafter noticed.

The Dutch were, with regard to the protection of timber, and also in some other respects, much more provident than the English have shewn themselves; they planted teak forests—we sell them for a tythe of their value, and then import timber from abroad.

The most valuable timber trees of the district are the following:—Palu, Halmilila, Milila, Satinwood, *Sweitenia chloroxylon*—the Buruta and Wiranda of the natives, Kubuk or Kumbuk (*Terminalia alata*,) Tammanné, Mígaha (*Bassia longifolia*,) Kiri Kón, Ebony.

Of cultivated trees we have the following:

Cocoanut (*Cocos nucifera*), which does not succeed nearly so well as in the maritime districts. The produce does not by any means equal the demand; the usual rate of exchange is two cocoanuts for one seer of rice. Palmyra palm (*Borassus flabelliformis*); not common, and little prized. Talipot (*Corypha umbraculifera*); seldom met with, except in the south-east part of the district. Jack; rare, though in some villages it bears readily. Mango; very rare.

Of the smaller fruit-bearing trees and plants, the following are to be met with in gardens; orange, lime, papaw, pine-apple, murunga, pomegranate, plantain, brinjal, (*Solanum melongena*); baṇḍakka, (*Abelmoschus esculentus*;) tampalá, (*Amaranthus*); patóla, or snake-gourd (*Trichosanthus anguina*); besides a few varieties of gourd, melon, and bean. On none of these is the least care bestowed, and the produce is in every respect inferior.

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The following are some of the plants which I have introduced :

- Casuarinæ.
- Sissu.
- Logwood.
- American sumach.
- Bourbon and New Orleans cotton.
- Madagascar plum.
- Nam-nam.
- Leetchee.
- Cape cabbage.
- Travellers-tree.
- Date.
- Dwarf cocoanut.
- Double pomegranate.
- Various species of stramonium.
- Do. plumbago.
- Do. roses.
- Do. plantains and bananas.
- Teak.
- Myrtle : with numerous ornamental plants.

For these I am chiefly indebted to Mr. Dyke, Agent for the Province ; to his Assistant, Mr. Twynam ; to Mr. Thwaites, Superintendent of the Royal Botanical Gardens, and to A. Y. Adams, Esq., of Petula.

Of all these before mentioned plants, the natives are encouraged to take seeds, slips or roots.

PRODUCE OF DISTRICT.

The staple product of the district is paddy, grown in the manner usual throughout the low country, that is, in low, gently sloping lands, irrigated from artificial tanks, some of which are many miles in extent.

Each village is settled by a little colony, headed by two or more leaders or elders, called *Gamarálas.*

After the ground has been cleared of jungle, a line is stretched down its length, then measuring from the bank, marks are put in, say at every ten fathoms, and each portion is given to a villager. If the soil varies greatly in the upper and lower parts of the field, or if one of these be for any reason preferable to the other, then each villager ("shareholder," or "partner," is the common term) will get one share in the upper, and one in the lower part, of the field.

To the *Gamarálas* a double portion is given, in consideration of their superior position as village elders. It is to be observed,

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that every shareholder has a right to all the land enclosed within lines running across the field and passing through the two stakes on the centre line which originally marked out his portion; that is, each man, commencing within his own portion at the centre line, may clear to the right and left till he reaches the high grounds which enclose the field; but quarrels would instantly arise if he were to clear either up or down, as it were, round the share of another. So soon as a share is allotted to a man, no matter whether he clears much or little, he comes under certain obligations; he must give one share of work to all repairs of the tank, and to the watching of the fields by night, and to the construction and up-keep of a ring fence. The original division is never lost sight of; thus, if two shares, even though they be contiguous, fall into the possession of one man, he will never talk of having "one large share," but of having "two shares," and will give two shares' work to watching, fencing, and repairing of the tank; so it is also with half or quarter shares.

The first and last shares, those at which the channel from the tank enters and leaves the field, are generally less productive than others. For this reason, and also because there is a larger quantity of fencing there, these shares, called the *ihala* and *pahala ẹlapaṭa* (shares at the upper and lower water-courses) respectively, are invariably larger than the rest.

It frequently happens, that either before or after sowing, it is found that the supply of water will not be sufficient to irrigate the whole field; in such cases the people resort to a practice called *betma* or "division." A portion of the field, of suitable size, is selected, and all the rest is abandoned. The selected portion is now divided into the same number of equal shares as there are original shares in the whole field, and every original shareholder gets one *betma* share for each original share in the whole field; and this in no way depends on the amount which he has cleared in his original share. Thus, suppose a man through idleness has not cleared any of the ground allotted to him, but has yet given, when required, labour to fencing, watching, and repair of tank, then when *betma* is

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resorted to, he will be entitled to a *betma* share, equal to that of his neighbours. It is to be observed, that the persons whose land is thus selected, do not get larger allotments than others. Frequently, the selected portion of land is worked in common, and the produce divided among the peasants according to the number of shares which they hold in their own right; at other times, it is actually subdivided, and each reaps the produce of the portion allotted to him, just as if it were his own ground.

Each such *betma* arrangement is binding only for one crop; when it has been removed, matters revert to their original position.

Other customs connected with paddy cultivation, are as follows :—

If a man's *betma* share is denied to him, then he has a right to demand a supply of water for his original share; if he insists upon this, it would in many cases happen that both his and his neighbours' crops would die; an amicable arrangement is therefore generally made.

If a man refuses to give his due share of work or money to the repair of the work, he cannot lead water to his field till he has repaid those who laboured for him.

If owing to neglect, as to fencing or watching, cattle or elephants damage the crops, then the man in fault must make good the loss.

If a man, after being warned that his cattle tresspass, fails to yoke them two and two, or else to tie cross bars to their necks, he is liable for all damage which they do.

If shareholders neglect to cultivate their fields for any particular crop, then those who do cultivate are entitled to select and to cultivate contiguous lands equal in extent to their own; the object of this is to lighten the labour of watching, fencing, and irrigation, which would become very harassing if the cultivated portions of the field were isolated.

Several of these rules appear to me admirably adapted for the people and country. The people are naturally lazy;

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here are stimulants. They are poor, and have not a sufficiency of wholesome food; here is security for the land being cultivated by some one.

There are certain privileges attached to each village, as for example, the collection of honey throughout all the jungle attached to it; one-half of the game killed; one out of every two tusks "bagged" in these; and the right of fishing the tank. All these rights give rise to constant squabbles.

The chief varieties of paddy cultivated in the District are:

Dik-vi
Ilankáliyan } ; in virgin soil.

Mahá-vi; for *táwalu*, as it does not die though overflowed.

Ẹl-vi (*sudu* and *kalu* "white" and "black,")
Kuru-vi.
Hinaṭi.
Muruṇga-vi. } for paddy fields.

These vary in colour, size and taste. Their most important distinction, however, refers to the length of time which they require for attaining maturity; some take three, some four, some six months.

There are two crops annually; that sown in December and reaped in March or April, gives the *Yala-mósama* in August and September. Occasionally, when the weather is favourable, and the preceding harvest has been lost, a crop is taken between the intervals, and is simply called "a between two years crop" *dẹ́wurudda ataré mósama.*

The return from paddy fields according to the reports of the headmen, varies from four to ten-fold; but there can be no doubt that the crop is frequently much heavier than this would induce one to suppose.

Another method of cultivating paddy is called *tawálu;* in this case the margins of the tanks themselves are cultivated, and the water for irrigation is raised by means of scoops, such as are in use at salt pans. This system gives larger returns

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than field cultivation, but the requisite labour is greater, therefore it is not in favour with the Siṇhalese ; the Moormen carry it on to a considerable extent.

A third system of paddy cultivation is on elevated ground, so called, high lands, in exactly the same way as other chéna crops are grown ; in this case irrigation is not applicable, and the crop is totally dependant for moisture on the natural fall of rain. The return is large, but the risk of losing one's labour is great.

I am sorry to say, that the general food of the people is not rice, but *kurakkan* (*Eleusine coracana*) which is grown in chénas. These are pieces of land on which the smaller trees and brushwood are cut down and burnt, the thicker branches are in this way merely charred, and being piled round the enclosure, form a tolerably good fence. The seed is sown broadcast, and then covered slightly by aid of that useful implement, the mamotie. A man can sow and cover about a seer of *kurakkan* seed in a day. It rarely occurs that more than two crops are taken from one chéna ; after the last of these has been removed, the jungle is allowed to grow up, and is not again cut till after the lapse of from five to fifteen years. It is evident that this system must prove most destructive to timber, as new land is cleared every year.

In these chénas various other plants, such as millet, &c. ; as also varieties of gram, &c., are cultivated. One of the most useful of these, so called, fine grains, is the *tala* of the Siṇhalese (*Sesame, Sesamum Orientale,*) which yields an oil used for lamps and in medicines. The price of the seed is about a penny per seer, and large quantities are sold to *tavalam* people from the low country, and to dealers at Trincomalie and Higgolla Mátalé. The people are fond of cultivating this plant, and if an English merchant would make arrangements for purchasing it here, or at the neighbouring ports, the cultivation might be increased to a great extent.

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Cotton is also grown in chénas, the seed being placed in the ground along with that of *kurakkan*, which grows faster, and is removed ere the cotton has approached maturity. The extent of such lands are always estimated by the quantity of seed *kurakkan* required ; and about four seers of cotton seed are sown with one of *kurakkan*. The cotton is sown about October, before the monsoon rains set in ; the pods begin to burst in about eight months ; and during the three following months the produce is gradually removed. If the plant be cut down at the close of the season, fresh shoots appear, and a second crop equal to the first is obtained, if the soil be good. From certain memoranda, collected by a predecessor about fourteen years ago, I glean the following information regarding a piece of cotton soil.

It measured eight seers of *kurakkan*, which, as before shewn, is equal to thirty-two of cotton. A man was employed forty days in cutting down the jungle, twenty more in lopping, and twenty-five in burning it, and removing the rubbish. The soil being good, the plants attained a height of six feet. This chéna yielded 30 *welis* of cotton in the first season, and this was about four bullocks' load, worth 6s. 8d., per load. The cotton is sold with the seeds unremoved.

One person will, in a day, clear a *welli* from its seed, and in four days will spin it into thread. This quantity is sufficient for a piece of cloth ten cubits long, and four spans broad. A weaver will complete this in three days, and receives in payment one and a quarter parras of *kurakkan*, or half this quantity of paddy. It is to be observed that there is not, and never was, a tax on cotton cultivation, so the above information may be looked upon as tolerably correct. From it we learn, that, in 1838, a man's labour was freely given during at least eighty-five days to the working of a chéna, the produce of which sold for £1 6s. 8d., which would give about 3¾d. per diem ; but the cultivator, after reaping his *kurakkan*, had to watch the cotton for nearly seven months, and had to collect, dry, and pack the produce.

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At present, the people seldom get more than 3s., for a load of cotton : this is attributed to the vast quantities of cloth now imported from India and England.

Being anxious to multiply as much as possible the varieties of plants on which the people depend, I applied for, and obtained from Government, two sacks of Bourbon and New Orleans cotton seed, which I am now distributing among the people, who, however, shew their wonted apathy on this occasion also.

High forest land is invariably selected for cotton.

Tobacco, when grown at all, is only found in small gardens, containing forty or fifty plants.

With regard to chénas generally, it must be observed, that, unlike paddy fields, they belong not to individuals, but to villages collectively ; and it is by amicable arrangements among themselves, that it is in each season arranged what portion shall be allotted to each man. As a general rule, all land from which water drains to the tanks or field of a certain village belongs to that village ; and to its inhabitants is reserved the right of cutting chénas within the limits so defined.

For some reason, which I do not know, chénas are not portioned off by parallels, but by radiating lines from some central spot, such as a large tree, boulder, &c.

INHABITANTS.

The mass of the inhabitants are Siṇhalese, approximating in manners, feelings, and appearance to the Highlanders, and not to the degenerate race which swarms in the maritime districts, and for whom they entertain a thorough contempt. Every man is a cultivator or proprietor of land, and I do not suppose that there is one Siṇhalese villager who is to any extent dependant on a trade for livelihood. Many persons are by caste mechanics, as blacksmiths, goldsmiths, washers, tom-tom beaters, &c., but the last two bodies alone devote any attention to their hereditary business, and even their reward consists not in money, but in land ; thus the people of a village will give a piece of land to some dhobies on condition that they

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wash for them and attend on occasions of ceremony; so it is with tom-tom beaters. If a man wishes to get a new axe or mamotie, he first of all goes to Trincomalie, Anurádhapura or Maṉṉár, and purchases some iron; he then prepares a quantity of charcoal, and taking these, proceeds to some neighbouring blacksmith, who is brought into good humour by the gift of some cakes, &c., and is perhaps ultimately persuaded to undertake the work, which, however, proceeds slowly and gravely, several days being occupied in working and talking about the work: all this time the applicant renders assistance to the smith. I have never been able to induce a village mechanic to settle here; they like receiving money wages, but cannot bear regular hours. Of late, in consequence of public works being commenced, a few masons and carpenters are to be found at the station; but all are strangers to the district.

To shop-keeping of every sort, the highland Siṇhalese have an insuperable objection, and thus it occurs that the boutiques along the roads are all occupied by Tamiḷs, Moormen, or low-country people. It is only in such situations that boutiques are to be found. In the villages themselves they are unknown; each man grows his own paddy and *kurakkan*, has his own cattle, and probably cultivates a few vegetables in his garden. If he wants a new cloth, he gives the cotton from his chéna, and also some grain by way of fee to a weaver, or else he barters the product of his field with some passing trader.

Until of late years, bare money was almost unknown in the district, but is now becoming more common every day. In all dealings among themselves, however, the natives adhere to the system of barter. The change already referred to, may be attributed chiefly to the fact that payment of taxes in kind has been done away with, and that the taxes in themselves are heavier. I am quite aware that many persons consider it an absurdity to maintain, that people can be better off simply because they are taxed, because money is taken from them; such is, however, the simple fact. The manner in which it works is probably thus:—A man knows that he will shortly have to pay to Government a couple of rupees; none of his

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neighbours will pay him for anything in cash, he therefore finds it necessary to grow something which he may sell to strangers, and he soon discovers that, *cæteris paribus*, the less bulky these goods are the better, after providing for the daily wants of himself and his family; he will therefore clear a chéna and cultivate, say *sesame*. The produce he then removes to Trincomalie, and sells for cash. He now finds that the sum he has received is greater than the amount of tax which he must pay, and in wandering through the bazaar his fancy is struck by some gaudy handkerchief, some bright brass vessel, some china, &c.; he buys the article and returns home. The sight of these purchases gives pleasure to his household, and creates in them new desires and new wants. To gratify and relieve these, he will in the next seasen clear a still larger chéna, and so the process continues. The increasing influence of money is strikingly apparent in the instance of headmen and people of family, who now care much less than heretofore about keeping up large bodies of dependents. In a paper on the statistics of the Puttaḷam district, which I had the honour to transmit to the Society some years ago, I shewed that the fishers there were most anxious that the now discontinued fish-tax should be renewed; and, on the whole, I believe, that at present the people ought to be comparatively heavily taxed, not indeed to such an extent as to discourage them, but to such that they may be incited to industry.

The castes are the same as those in other districts, with this exception, that there is one here not general over the Island, and which is superior to that which is elsewhere considered the highest—I mean the Wanni caste, who call themselves *Wanniwaru*, the latter being a mere honorific. These persons are the descendants of certain Tamiḷs who came over from the continent in the time of Rája Sen, who granted to each extensive tracts of land. They are very numerous here, and very troublesome, as they will not accept any inferior appointments, and for the most part think it quite beneath their dignity to educate themselves. As their claim to fill all the high offices has been rejected, they now frequently intermarry

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with Vellálas, and will in all probability soon be incorporated with that caste.

Considerable numbers of domesticated Veddás are to be met with, but none of those who still retain their primitive wildness reside in the district.

Six or seven villages of the Eastern division are inhabited by a set of people who have much the look of Moormen. If asked to what caste they belong, they reply: "We are from *Kurunégala habáge.*" Their neighbours call them "*Wageyei,*" a name which they do not at all like. They do not intermarry with the people of the district, aud seek for wives either in their own villages here, or in those of their comrades in Seven Kóralés. They preserve a tradition, that many centurirs ago their forefathers came from Málwar, but do not know where that place is. They seem to be a sort of Duriyás.

The Moormen or Mahomedans occupy numerous villages; they are locomotive, enterprising, fond of trade, and very deceptive. Their love of money is a perfect disease; they are more robust, intelligent, and bold than the Sinhalese, and are very much disliked and feared by them.

Many individual Tamils have settled in the district, but I am not aware that any one village is exclusively occupied by them.

A few Kaffres and Malays occur here; the former chiefly discharged soldiers and their offspring; the latter, people, who, as I believe, have some very good reason for living in secluded spots.

Two circumstances exercise a most beneficial effect on the people; the first, that for the last three years there has not been a single tavern in the district; the latter, that there are no resident proctors. Of course I do not mean to deny that many proctors may be good and honest men, nor that such are very useful; but it is evident that proctors who would settle in such a district as this, must be the very refuse of their profession, and such men would be a curse to the district.

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Education.

About eighteen months ago an English school was set on foot, and is still maintained. Owing to the liberality of Government no fees are demanded from the scholars, it being considered that the people must first learn what education is, before they are asked to pay for it. The number of scholars is only 13, but when a sort of boarding house now in contemplation shall have been constructed, the number may be expected to increase considerably.

A Tamil school, supported by private funds, is attended by a few scholars, but there is a constant succession of new faces; —so soon as a boy can read a little and scrawl his name, he sets up a boutique.

The best effects have followed from the strict examination to which applicants for headmanship are subjected, as to their proficiency in reading, writing, and arithmetic. In the latter respect, the progress is most marked, and has been assisted by the distribution of suitable books of instruction.

This being one of the most sacred spots of Ceylon, it might be expected that I should have much to say regarding the Buddhist priesthood. This, however, is not the case; the priests here are ignorant beyond description; know nothing of their own history or religion: and though they say that they have a copy of the Maháwanso, acknowledge that they have never read it. As they do not take the slightest trouble with the people, and generally disappear until the time of the festivals approaches (at which period offerings to a large amount are brought in), the people are heartily wearied of their yoke, and if no external aid be afforded to the religion, it will soon be practically extinct.

I confess to having an extremely low opinion of the Buddhist priesthood. To judge from those whom I have met (the number is not small), I think they will be found idle, selfish, inconsistent and, *ex-officio*, discontented.

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Means of Communication.

There are no navigable or perennial rivers, and no canals in the district; and the trade of the country will not for a long time to come justify Government in altering this state of matters. Up till the year 1845, the only road in this district was that from Maṉṉár to Anurádhapura, along which the tappal has hitherto been carried. About the period mentioned, a sudden advance was made; a great central route passing from north to south, and opening the communication between Jaffna and Kandy, having being surveyed and cleared; others leading to Trincomalie and to Puttalam were also opened, so far as they lie within this district.

That most excellent of laws, the Road Ordinance of 1848, has here, as elsewhere, effected much good; it is only necessary to remark, that the following works have been carried out within the last three years:—

I. The central line between Jaffna and Kandy has received general and extensive repair.

II. A substantial bridge, with three water-ways, has been constructed over the Saṇgili Kanadara-oya.

III. The Puttaḷam road has been brought into such a státe of efficiency as the present nature of the traffic requires.

IV. Similar improvements to the Trincomalie road have also been carried out.

V. The Maṉṉár road has received general repair, though no permanent bridges have been made.

VI. A road between Madawachchi on the central, and Horowepotáne on the Trincomalie road, has been surveyed, traced, and cleared throughout its whole length, though a few miles are still not available for cart traffic.

VI. Another line joining Kekiráwe on the central, with Márágahawẹwa on the Puttaḷam road, has been surveyed, traced, and opened, throughout about 24½ miles of its course

VIII. A line joining Mahákekiráwe with Horowepotáne, oth as abovementioned,) has also been traced.

IX. And lastly, a line from this to the Mannár road near Adapankulam, has been surveyed, and in a great measure traced.

The whole amount collected during each year since 1850, is as follows :—

Year.	No. liable.	Value in Money.		
		£	*s.*	*d.*
1850	10,117	758	15	6
1851	10,923	819	5	6
1852	10,910	818	5	0
Total...	31,950	2396	5	0

It will be observed, that the rate of commutation fixed for six days' labour, is only 1*s.* 6*d.* This is just half of the real proportion ; but this arrangement was purposely adopted, on the supposition that hired coolies do more work than statute labourers ; besides which, this system enables one to concentrate one's efforts on such roads as most immediately call for attention. I think, however, that these advantages have been over-estimated, and that the rate of commutation should have been higher.

Of late years, a good deal has been said about the desirableness of giving to the natives Municipal privileges, and it was hinted that the Road Ordinance was but the first step in that direction. In those districts with which I am best acquainted, the hopes of the Progressists have been woefully disappointed ; the people frequently not shewing the slightest interest in the elections ; not recording their votes ; not even taking the trouble to attend.

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There being little trade in this district, and the people having a great dislike to strangers and to bustle, the Road Ordinance is even now far from popular ; but the more intelligent villagers are becoming convinced of the advantages which it secures to them.

Climate.

Some one said long ago, that the climate of Nuwarakaláwiya was very deadly—that the place was a second Sierra Leone ; and no amount of proof to the contrary has yet dissipated this absurdly erroneous opinion. It is quite possible, that twenty or thirty years ago, fever was more prevalent than at present ; but I do not know of anything to warrant the conclusion, that even at that time it was unhealthy during the greater part of the year. Situated in a vast plain, which is covered with dense wood, and in which there is a multitude of neglected tanks, the place is certainly no sanitarium, but still I think that during nine months of the year, it is fully as healthy as most stations. The unhealthy season lasts from the beginning of December till the end of February, and during this portion of the year the establishments are allowed to remove elsewhere. As the jungle around the station becomes cleared away, and as the place becomes more healthy, the furlough allowed is gradually circumscribed, and in the course of a few years, there will probably be no occasion for an annual interruption of public business. The fever of Nuwarakaláwiya is distinguished less by the violence of sudden isolated attacks, than by its insidiousness and long continuance. One is never very ill, but neither is one ever very well ; one feels a general listlessness, a sensibility to the effects of draughts, which gradually debilitates one to a lamentable extent.

It is a common remark of the people, that draughts are much more common now than they used to be twenty or thirty years ago, and this is—justly, as I believe,—attributed to the great extension of the chéna system, whereby pools, springs, and marshes are dried, and large surfaces exposed to the burning rays of the sun. I regret to say, that my manifold engagements, and

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frequent absence from the station, have prevented me from making any regular meteorological observations.

Antiquities.

Nuwarakaláwiya has a degree of local celebrity, from having, during many years, been the residence of the Siṇhalese Rájas.

We learn from the Maháwaṇso, that Prince Wijaya established himself at Tambapanni or Tammannaḍawiya, near Puttaḷam, about the year 543 B. C. His successor, in 504 B. C., removed to Wijitapura in this district. Paṇḍukábhaya who followed in the year 474 B. C., took up his residence at Anurádhapura; and from this time till A. D. 729, Anurádhapura continued to be the metropolis of Ceylon. About the year 307 B. C., the *thero* ('saint') Mahindo, son of Dhammáṣoka, Emperor of India, introduced Buddhism into Ceylon. It was then that the branch of the sacred *Bó-gaha* (*Ficus religiosa*) was brought to, and self-planted at, Anurádhapura; and here, enclosed in a triple terrace of masonry, it still exists, and still attracts annually thousands of pilgrims from all parts of the Island, and occasionally also from India, and even from Siam; and it is here that the yet venerated Duṭugemunu, about B. C., 161, expended a vast amount of labour in erecting those bee-hive shaped edifices called *dágabas*, *chaityas*, or *thúpas*, which enshrine relics of the philosopher Buddha; and which, though time has impaired the symmetry of their form, still tower in solemn grandeur over the surrounding forests, and proclaim to the yet distant traveller the locality of the sacred city. Seven or eight *dágabas* of various sizes are scattered round the station: these with carved step-stones, and altars, pillars, capitals, and images of Hindú deities, with long stretches of low mounds and walls, form the chief antiquities to be found at the station, and attract notice, rather from their vast number and extent, than from any other quality they possess. They are interesting as marking the period when Siṇhalese genius and enterprize reached their zenith; and to the eye of the engineer, the accuracy of the work is a matter of just admiration.

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The *Mahá Lohapásáda*, will much disappoint the visitor. It consists simply of a solid square of roughly squared slender pillars, 40 in each row, and rising about 9 feet above the general surface. Each side of the square is 221 feet. There can be little doubt that these pillars were the mere foundations of a huge pyramidal wooden structure, nine stories in height, which must somewhat have resembled the so-called Chinese porcelain towers, and which, when decorated in the Siṇhalese fashion, must have formed a very striking, if not a very beautiful object.

It is impossible for me here to describe the various antiquities round the station. Perhaps a future paper may be devoted to the subject.

Some time ago I commenced a large scale plan of the ground around the station, but want of leisure has forced me to abandon the work.

Mihintalé, eight miles east of Anurádhapura, is much resorted to by pilgrims; for there stands the oldest of the *dágabas*, and there the great teacher Mahindo expired. A fine view, stretching probably from sea to sea, and far up to the Mátalé hills, is obtained from the snmmit.

At Owkonna, about twenty-six miles south of Mihintale, there is a colossal erect statue of Buddha, about 35 feet in height; it is cut out of solid rock, to which it remains partially attached. The right hand is raised as in the act of benediction.

Wijitapura, near Owkonna, has been already mentioned. A siege which it underwent is minutely described in the Mahá-waṇso; but on enquiry, I could not ascertain the existence of any walls or other structures, except a small half-ruined *dágaba*.

Close to the southern extremity of this district, but just within the limits of Seven Kóralés, at Seseruwa-kandé Viháré, there is a statue of Buddha resembling in size and position that at Owkonna.

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Both here and at other parts of the district, I have met with and copied numerous inscriptions; but regarding these deem it unnecessary at present to do more than state, that the characters employed are not to be found in any of the alphabets in my possession.

Fiscal Arrangements.

This district always formed an integral portion of the Kandyan Provinces, being specially entrusted to the third Disáwa for the time being. The last of these appears to have been Talgahagoḍa Disáwa, who seems to have resigned about the year 1833. It was about this time that the district, as it now exists, was formed by adding some portions of Mátalé and Seven Kóralés.

Until a few years ago, the native headmen consisted of Mahá Wanni Unnehes, Wanni Mudiyanses, and Kariyakarannas, all these being connected with both the Revenue and Police Departments. At present we have Divisions, Kóralés and Tulánas, under Raṭémahátmayás, Kóráles, and Lékamas; of the first there are 3, of the second 17, of the third about sixty.

Raṭémahátmayás receive £2 10*s*. per mensem, besides five per cent. on the revenue collected from their divisions.

Kóráles receive five per cent, on their collections, and hold, free of tax, such lands as they possess within their own Kóralés.

The Lékamas, unlike the two other grades, are at present regarded solely as Police Vidánes. As a matter of fact, however, they remain, as formerly, general assistants of the Kórálés; and this arrangement ought, I think, to be again formally sanctioned. They hold, free of tax, such of their lands as lie within their own Tulánas, and do not receive stated salary, nor percentage.

It is probable that the system of allowing headmen to hold land tax free, will soon be altogether done away with. It has been maintained, probably with the intention of obtaining the services of men personally interested in their own divisions; but this object can be otherwise secured, and a constant source of demoralization cut off. At present, quantities of land, are to

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escape tax, entered in the names of headmen, who after the lapse of some years claim, and frequently take possession of the lands themselves. At the same time, I see no objection to employing unpaid headmen, so long as the offices are eagerly sought by the people. The Siṇhalese love of honor and distinction, though carried to somewhat unreasonable lengths, is in itself laudable, and gives a *point d'appui* to those who wish to elevate the people. In our own country, many offices unconnected with salary are eagerly contended for, and I see no reason why the same system should not be followed here. That unpaid headmen would take bribes is not more true than that the paid headmen now do so.

The headmen are, on the whole, inferior in activity and intelligence to those of adjoining districts. This may be attributed to the fact, that the people were, until lately, almost debarred from intercourse with others; that the district was formed of fragments taken from others, and which are only beginning to amalgamate into one homogeneous whole; that the resident civilians have been frequently changed; that the establishment is necessarily broken up annually; and that formerly the Wanniya caste had a sort of monopoly of the headmenships; and even now, many of these people, while they think that they have a right to be made Kórálás and Raṭémahátmeyás as opportunities occur, yet totally neglect their own education, on the plea that they can pay others to read and write for them. I think that a bad effect has been produced by the unceremonious way in which headmen are appointed and dismissed; and believe, that Government in giving up all sorts of state and ceremony, is gratuitously throwing away a powerful means of influencing the people.

Whether headmen ought, or ought not, to have more power than at present, is a matter for serious enquiry, but need not be entered upon here.

Revenue.

With some trifling exceptions, the sole source of revenue is the tax on grain.

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Formerly this used in part to be paid in kind (*ámanai*), but this gave rise to so much deception and loss, that the plan has long since been abandoned. At present the great majority of the tax is collected by the commutation system. According to this, the average annual produce of each piece of land being estimated, the cultivator redeems that portion of it which would fall to Government. It is to be observed, that the rate of redemption is fixed very low, it being considered that the loss thus occurring is more than counterbalanced by the ease of collection, the fixity of revenue, and the checking of deception. In this opinion I entirely concur, and believe the commutation system to be eminently advantageous, both to the rulers and the ruled. The whole process is as follows:—

The headmen send in lists of the lands, giving the extent and probable produce of each share; these lists then may be compared with those of former years, so as to expose any fraud, and are then entered in large register-books; additional columns, shewing the tithe, in grain and in money, being added. There is then drawn out a set of tickets, forming in fact, a copy of the register; each ticket containing a memorandum as to the amount due on each share. After this is prepared, the Assistant Agent proceeds to some appointed village; the people assemble; those of a certain village are called forward; the first name is read, the peasant comes forward, signs the register, and receives the memorandum shewing what he has to pay, and as the matter proceeds, complaints as to over-estimation, &c., are frequently heard at once, and the requisite alterations made. After all this is done, another set of receipts, corresponding to the entries in the registers, is filled up; each such receipt is given by the headman to the person whose name is inscribed on it, when he pays the tax due by him. In this way the peasant knows beforehand what he has to give annually, and he cannot be called on by the Kóráĺá to pay twice over, as used formerly to occur not unfrequently. The headmen, when they bring revenue to the Kachchéri, give in lists of those from whom they have received it, and thus, if a headman dies or is dismissed, there is no difficulty in discovering who is and who is not in arrear.

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These commutation settlements are made for periods of five years. It was at one time proposed that they should run for twenty years, but fortunately this scheme was abandoned, as also that of allowing the people to redeem their whole grain tax at ten or twenty years' purchase.

The taxes from chénas, *tawalas*, and lands which are cultivated at uncertain periods, are collected by estimation, that is, the growing crop is estimated, and the villager redeems the tythe at a fixed rate, which is somewhat below the market value of the grain; at present it is 8*d.* pence per parra, the market value being from 9*d.* to a 1*s.* It is desirable to check this system so far as circumstances allow, as it is impossible to prevent deception being carried on to a great extent.

The execrable system of farming taxes has never been in use here, and except under very peculiar circumstances I should deplore its introduction.

Fine grains pay no tax, this being a Kandyan district; and really, when a man is reduced to living on *kurakkan* "roṭies", it would be cruelty to tax him. The only thing that might induce one to lay a tax on these grains would be, the hope of forcing the people to the cultivation of wholesome articles of diet.

It appears that in 1825 the revenue realized from this district amounted to the handsome sum of eleven pounds, thirteen shillings and five pence half penny; and from that time until 1883, it seems to have averaged only £129 13*s.* 5*d.*; after this period, however, rose steadily and rapidly, and now nearly, if not quite, covers the expenses.

Last year, (1852) the grain revenue amounted to £1735 4*s.* 5¼*d.* and the whole real revenue, exclusive of road tax, to £1874 16*s.* 5¼*d.* This year these items amount to £1021 1*s.* 5*d.*, and £927 4*s.* 4¾*d* respectively.

Two causes will account for this decrease :—

1. Within the two previous years almost all arrears had been collected.

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II. Last year murrain prevailed to a lamentable extent, and so many of the draught cattle died, that large quantities of land were left uncultivated; and as the people are naturally improvident, they were at once reduced to great distress. On the other hand, the amount due for grain commutation by the settlement just closed, contrasts favorably with that which preceded it, shewing an increase of £74 8*s.* 0½*d.* A slight examination will leave no doubt that this district is rapidly increasing in wealth and importance.

CRIME.

The people of Nuwarakaláwiya are the most gentle I have had the fortune to meet. It is true they quarrel a good deal, but these squabbles are generally of the most trifling kind; the parties after exhausting their list of abusive terms, pull each other's hairs, then shriek and run away from each other, and so the matter ceases. Serious assaults, robberies, murders, are all but unknown, and during three years I have not had to punish one native of the district for pilfering.

Cattle stealing used to prevail to a great extent, but has been much checked since the matter was placed in the hands of the District Judges. It is still carried on to some extent on the borders of Seven Kóralés and, latterly, of Mannár, but three-fourths of the charges now investigated prove utterly false.

The people are fond of litigation, but not I believe to the same extravagant extent as elsewhere, and numerous disputes are settled by reference to the Assistant Agent without going to the Courts of law at all; and some such system as this seems to be infinitely the best adapted to the people.

FUTURE PROSPECTS.

The soil on the major part of the district being good, there can be no doubt that agriculture will receive more and more attention. Roads are being formed in every direction, and if Government took up the matter of Tank repair with spirit, I believe that Nuwarakaláwiya would profit thereby fully as much as any district in Ceylon.

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ROYAL ASIATIC SOCIETY,

CEYLON BRANCH.

ON THE PRINCIPLES OF SIN̥HALESE CHRONOLOGY.

BY THE REV. C. ALWIS.

TIME is that abstract duration which pervades all ages, without either a commencement or conclusion. It partakes of many of the most sublime attributes of the Supreme Being, such as eternity, invisibility, omnipresence, immaterialism, and so forth. There is some method of computing it amongst every nation. This computation and adjustment of time form the principles of Chronology.

The most natural division of time seems to be into that of days. Day is called in Sin̥halese *dawasa*. The interval between two successive risings of the sun is a *dawasa*. Seven dawasas are reckoned into one *satiya* "week." The days of the week, as among many other nations even in the West, are appropriated to seven gods, and are called by their names: thus *Iridá* "Sun's-day," *Sandudá* "Moon's-day," *Angaharuwádá* "Mar's-day," *Badádá* "Mercury's-day," *Brahaspatindá* "Jupiter's-day," *Sikurádá* "Venus'-day," and *Senasurádá* "Saturn's-day,"

Dawasa is divided into *dawála* "day time," and *rátriya* "night time." *Dawála* is from the rising to the setting of the sun; and *rátriya*, begins with the setting of the sun and continues till his rising. From the rising of the sun to his arrival at the meridian is called *pera-waruwa* "forenoon;" and the interval between the meridian and the setting of the Sun is termed *pas-waruwa* "afternoon." "Noon" or "midday" is called *maddáhana*.

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The night is divided into three equal portions called *yama* "watch." The first watch is called *pera-yama* or *hęndé yámaya*. The second or middle watch is called *maddima yámaya;* and the last watch is called *pas·hima yámaya*, or *pándara yámaya*. The midnight is called *maddima rátriya*. The time during which the rays of the sun's light fall upon the ground before his rising above the horizon, is termed *aḷu-yama*, and that of his rising is designated *pándara;* "morning" in general is called *udaya*.

The natural day is divided into 60 equal portions, each being called *pęya*, equal to 24 English minutes. Each *pęya* is divided in 60 *winádi*, and each *winádiya* into 60 *tatparas*.

A portion of time consisting of 2½ *pęyas* is termed *hórá*. answering exactly to the Greek and Roman word *hora*, "hour." Astrologers suppose that the same seven gods to whom the supervision of the days of the week are appropriated, preside over each successive seven *hórás*, beginning from that one to whom the day belongs, but in the following order, namely, Sun, Venus, Mercury, Moon, Saturn, Jupiter and Mars. Thus, on Sunday the first *hórá* is of the Sun, the second is of Venus, and the third is of Mercury, and so forth; on Monday the first *hórá* belongs to the Moon, the second to Saturn, and the third to Jupiter, and so on.

The firmament studded with constellations and stars, apparently in an incessant motion from east to west, is divided into twelve portions, each called *rásiya*, "sign." The names of these twelve *rási*, together with the time during which they emerge out of the horizon, are as follows:—

NAMES.	P.	W.		H.	′	″
Mésha	4	19	Aries	1	43	36
Wṛishabha	4	43	Taurus ...	1	53	12
Mithuna	5	17	Gemini ...	2	6	48
Karkaṭaka	5	29	Cancer... ...	2	11	36
Siŋha	5	15	Leo	2	6	0
Kanyá	4	57	Virgo	1	58	48

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Names.			P.	W.			H.	′	″
Tulá...	...	...	4	57	Libra ...	...	1	58	48
Wṛiṣchika	...	...	5	15	Scorpio	...	2	6	0
Dhanu	...	...	5	29	Sagittarius	...	2	11	36
Makara	...	...	5	17	Capricornus	...	2	6	48
Kumbha	...	...	4	43	Aquarius	...	1	53	12
Mína	...	...	4	19	Pisces...	...	1	43	36

From this table it appears that all the *rási* are not of equal size, consequently some take a longer time than others in passing through the horizon.

Of the twelve *rási*, that called *Siṇha*, "Leo" is appropriated to the Sun, and the one next before it, called *Karkaṭaka* "Cancer," is given to the Moon; the rest of the *rási* are appropriated to the five ancient planets in the order of their position with regard to the Sun. Thus, *Mithuna* and *Kanyá*, the *rási* or "signs" bordering on each side of the mansions of the Sun and Moon, belong to Mercury. The two beyond these on each side, namely *Wṛishabha* and *Tulá*, are appropriated to Venus; the two beyond these namely *Mésha* and *Wṛiṣchika*, belong to Mars. The next two, *Mína* and *Dhanu*, are the mansions of Jupiter, and the remaining two, *Makara* and *Kumbha*, belong to Saturn.

The Sun, the Moon, and the Planets, move through these *rási* in their courses.

Awurudda "year," is the time during which the sun travels through all the twelve *rási* in his course, beginning from the first point of *Mésha rásiya*. Sixty years make a cycle. The number of the cycle of any given year is found by adding 11 to the given year of *Saka* (which is 78 years less than the Christian era) and dividing the sum by 60. The remainder, after this process, is the number of the cycle of the given year; and if nothing remains, 60 is the cycle.

The Siṇhalese have four eras by which they date the year of any event. That which is most familiar to the generality of the people is the *Ṣaka Warsha*, which is the year of some

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King of the continent of Asia, whose name was Ṣaka, and who was said to be the head of the royal race of Yawana (Grecian). The present year (A.D. 1855) is the 1777th of the *Ṣaka Warsha*, 78 years later than the Christian era.

They use the year of our Lord Jesus Christ in all the public documents at present; and the inhabitants of the towns and their neighbourhood are more familiar with this than *Ṣaka Warsha.*

For religious purposes they use *Buddha Warsha*, the year from the death of Gautama Buddha, 621 years before *Ṣaka Warsha.* Consequently, the present is the 2398th year of *Buddha Warsha.*

In most of the Medical, Astronomical, and other Scientific works of very ancient dates, which we have in Sanskrit from the Védas of the Brahmins, another era, called *Kaliyuga Warsha*, is used. Kaliyuga is the last of the four *yugas* or ages of the world, which, the Siŋhalese say, have passed. The commencement of the *Kaliyuga* was 3179 years prior to *Ṣaka Warsha.* The present year of the *Kaliyuga* is the 4956th. The whole period during which it is to exist is 432,000 years. The *yuga* or age that preceded *Kaliyuga* was called *Dwápara*, and existed twice as many years as the *Kaliyuga*, namely 864,000. The one before that was Trétá, which existed 1,296,000 years being three times as many as the years of *Kaliyuga.* And the one preceding this was *Kṛita*, the duration of which was four times that of *Kaliyuga*, namely 1,728,000 years. Before these four *yugas*, the present *kalpa* or the period of the world, is believed to have existed during 27 divine *yugas* of an innumerable number of years.

The length of a year is 365 *dawas*, 15 *pęyas*, 31 *winádi*, and 15 *tatparas.* The commencement of the Siŋhalese year falls generally about the 11th of April. To find the exact moment at which any given year commences, or the moment at which the sun enters into *Mésha râsiya*, the following is the rule. Subtract 1244 from the Ṣaka era, and by the remainder multiply 365 *d.* 15 *p.* 31 *w.* 15 *tat.*; and to the productadd 1615536 *dawas*

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59 *p.* 45 *w.* 30 *tat.*; and then throw off as many 7 days as possible from the sum. The commencement of the year or the sun's entering into *Mésha rasiya* is so many days after Friday, as appears in the remainder of *dawas*, *peyas*, *winádi*, and *tatparas*. If there is no remainder in the place of days, the commencement of the year is on Friday; if one, on Saturday, and so forth. Thus, to find the commencement of the present Siṇhalese year, the year of Ṣaka 1777 (A. D. 1855), subtract 1244 from 1777 which leaves a remainder 533, by this multiply 365 *d.* 15 *p.* 31 *w.* 15 *tat.*, which gives a product of 19682 *dawas* 52 *p.* 36 *w.* 15 *tat.*; then add to this product 1615536 *dawas*, 59 *p.* 45 *w.* 30 *tat.*, which will give a sum of 1810219 *dawas*, 52 *p.* 21 *w.* 45 *tat.*; after this, throw off as many seven days as possible, when there will be a remainder of 5 *d.* 52 *p.* 21 *w.* 45 *tat.* The commencement of the year is thus 5 days after Friday, namely, on Wednesday, at 52 *peyas* and 21 *w.* 45 *tat.*: which, according to English calculation, is Thursday 2 h. 56′ 42″ A.M., or 3 minutes and 18 seconds before 3 A.M.

Másé "month," is about the twelvth part of a year, and is of two kinds, the solar and lunar. The solar month is the time during which the sun continues in any one of the twelve *rási*.

The moment at which the sun enters into any one of the twelve *rási* is found by the following rule :—to the *dawas peyas* and *winádi* of the sun's entering into *Mésha rásiya,* add the number of *dawas, peyas* and *winádi* opposite to the required *rási* in the table below, and leave off, if possible, seven from the number of days, and the remainder is the *dawasa, peya* and *winádiya* after Friday, when the Sun enters that *rásiya.*

		D.	P.	W.
Wṛishabha	... ...	2	55	32
Mithuna	... ...	6	19	44
Karkaṭaka	... ...	2	56	22
Siṇha ...	... ...	6	24	34
Kanyá ...	... ...	2	26	44
Tulá ...	... ...	4	54	6

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	D.	P.	W.
Wrișchika	6	48	13
Dhanu	1	18	37
Makara	2	39	30
Kumbha	4	6	37
Mína	5	55	10
Mésha	1	15	31

Thus, to find the time at which the sun enters *Mithuna rásiya* in the present year, add

D.	P.	W.	
2	52	22*	Sun's entering into *Mésha rásiya*
6	19	44	as found opposite *Mithuna rásiya*
9	12	6	
7	0	0	
2	12	6	That is, on Sunday at 12 *p.* 6 *w.*

According to English calculation, 10 h. 50′ 24″ A.M.

The length of each of the twelve solar months, or the time during which the sun continues in any one of the *rási*, is given in the following table.

	D.	P.	W.
Mésha	30	55	32
Wrishabha	31	24	12
Mithuna	31	36	38
Karkaṭaka	31	28	12
Sinha	31	2	10
Kanyá...	30	27	22
Tulá	29	54	7
Wrișchika	29	30	24
Dhanu	29	29	53
Makara	29	18	7
Kumbha	29	48	33
Mína	30	20	21
Total...	365	15	31

* In leaving out the *tatparas*, if there are 30 or more, one is added to the winádies.

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From this table it appears, that the sun does not pass through every *rásiya* in an equal length of time; he sojourns the longest time in *Mithuna*, being 31 *d.* 36 *p.* 38 *w.* From thence he continues less and less in every successive *rásiya*, until he comes to *Makara*, where he passes only 29 *d.* 18 *p.* 7 *w.* From *Makara*, again, the time of the sun's sojourn in each *rásiya* successively becomes longer and longer, till he comes up to *Mithuna* again. The difference of the sun's longest and shortest sojourn in these two *rási* is 2 *d.* 18 *p.* 31 *w.*

The longest day here is said to be 31 *p.* 22 *w.*, and the shortest 28 *p.* 38 *w.*, or according to English reckoning, the longest day is 12 hours and 31 minutes, and the shortest day is 11 hours and 29 minutes. In order to find the gradual change of the different length of day and night, the following table is given:—

			P.	W.
Mésha ...	...	...	30	0
Wṛishabha	...	...	30	38
Mithuna	...	...	31	10
Karkaṭaka	...	...	31	22
Siṇha ...	...	...	31	10
Kanyá...	...	...	30	38
Tulá ...	...	...	30	0
Wṛiṣchika	...	...	29	22
Dhanu	...	...	28	50
Makara	...	...	28	38
Kumbha	...	...	28	50
Mína ...	...	...	29	22

In this table, the length of the day at the time of the sun's entering into each of the 12 *rási* is given; the difference between this and 60 *péyas* being the length of the night. The length of the day or night in any day intervening between any two days given in the table is more or less in proportion. This table is, however, constructed upon the principle that the sun always sets first at the point in the *ráṣi-chakra* "zodiac" opposite to his position when he rises in the eastern horizon.

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But as the sun progresses about one-sixtieth part of a *rásiya* from the time of his rising to that of his setting, and as the seventh *rásiya*, by which he always sets, is never equal in size to that by which he rises, there is always a difference of about 5 *winádi*: consequently, the length of day or night given in the table occurs always about 20 days previous to that given in it.

The six months from the Sun's entering into *Karkaṭaka* is termed *Dakshiṇa-ayana* "Southern course," and the other six months from his entering into *Makara*, is called *Uttara-ayana* "Northern course," because during these months the sun seems to travel towards these directions.

This declination of the sun is said to cause the general length of a man's shadow (in the central parts of this Island,) cast on the ground at noon for each one-third of the solar month, to be the following number of feet;—viz.:

MONTH.	NO. OF FT.			MONTH.	NO. OF FT.		
Mésha ...	1½	1	1½	Tulá ...	2½	3	3½
Wṛishabha ...	1½	2	2½	Wṛișchika ...	3½	4	4½
Mithuna ...	2½	3	2½	Dhanu ...	4½	4½	4½
Karkaṭaka ...	2½	2	1½	Makara ...	4½	4	3½
Siŋha ...	1½	1	1½	Kumbha ...	3½	3	2½
Kanyá ...	1½	2	2½	Mína ...	2½	2	1½

This portion of the shadow of a man is called *awachcháwa*, or more properly, *awachchháyáwa*, "extra shadow." Thus, the *awachcháwa* for the first 10 days of the sun's stay in *Mésha*, or the 10 days after the 11th of April, is one foot and a half; for the next 10 days of the same month, it is one foot, and for the third 10 days it is one and a half. And for the first 10 days of the solar month of *Wṛishabha*, the "extra shadow" of a man is one foot and a half; for the next 10 days it is two feet, and for the last 10 days it is two and a half feet; and so on.

In consequence of there existing little or no difference in the aspect of the country at various seasons, the Siŋhalese do not recognise the four seasons of the year, as people of other countries do. The medical and astrological books, speak

indeed, of six seasons of the year, called *ṛitu*, and the religious books make mention of three *ṛitus:* but they are of no consequence here, as people do not talk of them on ordinary occasions.

The lunar month is the period from the moon's passing between the sun and earth until she comes again between these two bodies. The names of the twelve lunar months beginning from that in which the sun comes to *Mésha*, are as follows:

Solar Month.	Lunar Month.	Corresponding English Month.
Mésha	Bak	April and May
Wṛishaba	Wesak	May and June
Mithuna	Poson	June and July
Kaṭaka or Karkaṭaka	Ęsaḷa	July and August
Siṇha	Nikiṇi	August and Sept.
Kanyá	Binara	Sept. and Oct.
Tulá	Wap	Oct. and Nov.
Wṛiṣchika	Il	Nov. and Decr.
Dhanu	Uňduwap	Dec. and Jan.
Makara	Durutu	Jan. and Feb.
Kumbha	Nawam	Feb. and March
Mína	Mędin	March and April

The lunar month does not necessarily begin on the same day as the solar. It begins with the day after the new moon. That lunar month in which the sun enters *Mésha ráṣiya*, or that of which the full moon is nearest to the sun's entering *Mésha ráṣiya*, is the first lunar month, *Bak masa.*

When there are thirteen full moons in any year, the additional month is called *Adhika másé*, two of the months being called by the same name.

About *Adhika másé* there is at present a controversy, in which every one of the Budhist priests of the Island is more or less engaged. It was originated about 35 years ago, by Atthadassi Terunnánse of Bentoṭa, who is considered to be the most learned of the Buddhist priests of the day. One party

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maintain that the *Adhika mási*, or the additional month, ought to be in that solar month in which the two full moons occur; but the other party say, that the additional month must be next to *Esala*, and ought to be called the second *Esala*, without any regard to the solar month in which the two full moons occur.

The lunar month is divided into two portions, each called *pakshaya*. One, from the day after the new moon to the day of full moon, is called *pura*, "increase;" or *púrwa pakshaya*, "the former part;" or *sukla-pakshaya*, "white part:" and the other, from the day after the full moon to the day of new moon, is called *awa*, "wane," or *apara-pakshaya*, "the latter part," or *krishna-pakshaya*, "the black part." Each *pakshaya*, is divided into 15 *tithi*. The length of a *tithi* varies from 53 to 67 *peyas*.

The names of the fifteen *tithi* from the first, are Pelawiya, Diyawaka, Tiyawaka, Jalawaka, Wiséniya, Setawaka, Satawaka, Atawaka, Nawawaka, Dasawaka, Ekoloswaka, Doloswaka, Teleswaka, Tuduswaka and Pasaloswaka or Amáwaka. Of these two names for the last tithi, Pasaloswaka is the full moon, and Amáwaka, the new moon.

The moon's path in the firmament is divided into 27 portions, each called a *nekata*, "asterism." Each *nekata* is four-ninths of a *rásiya*. The names of the 27 *nekat*, beginning from the first point of *Mésha rásiya*, are Aswida, Berana, Keti, Rehena, Muwasirisa, Ada, Punáwasa, Pusha, Asálisa, Má, Puwapal, Uttarapal, Hata, Sita, Sá, Wisá, Anura, Deta, Mula, Puwasala, Uttarasala, Suwana, Denata, Siyáwasa, Puwaputupa, Uttaraputupá and Réwatiya. The *tithi* and *nekata* of any day or time are those in which the moon is in her course through the zodiac in that day or time. The time of the moon's passing through each *nekata* varies from 53 to 67 *peyas*.

The popular notion of the moon's rising or setting *peya* respectively at day and night of *pura* and *awa*, and *vice versâ*, is twice the number of *tithi*. So that on the day of Pélawiya

in *puru*, or the first day of the moon, she rises in the second *peya* after it is day, and sets in the second *peya* after it is night, in proportion to what is past out of the *tithi*. On Diyawaka of the *pura*, or on the second day of the moon, she rises in the 4th *p.* after it is day, and sets in the 4th *p.* after it is night. On *Julawaka* of *awa*, or the 4th day of the wane, the moon rises at the 8th *p.* after it is night, and sets in the 8th *p.* after it is day, and so forth. It should be noticed, that in general one *tithi* and *nekata* exhibit in one part of the day, and another *tithi* and *nekata* in the next part of the day; and so proportionably the rising and setting of the moon are changed. Although the above is the popular notion of the moon's rising and setting time, its exact moment is known accurately by the position of the moon in the *rásiya* through which she passes, by a reference to the *nekata* of the day in a common *lita*, or almanac.

Each of the four quarter days of the moon is called *póya;* the full moon is called *Pasaloswaka póya*, and the new moon *Másé póya*. The first quarter is called *Másé giya atawaka póya*, and the last quarter *Pahaloswaka giya atawaka póya*. In the *póya*, or quarter days, the Buddhists generally refrain from worldly occupations, and engage themselves in religious works, believing, on the authority of Buddha, that on these days the messengers of the god Sakra or Indra come to the human world, observe the deeds of the people, record each man's actions distinctly in a book, and then carry it to report to their master.

The Sinhalese use different modes of computing time or finding the *peya* of the day. The most common way, when the sun or moon is visible, is by the shadow of a person cast on a level ground measured with his own foot. The method of doing it is thus. Leave off the *awachcháwa* "the extra shadow" as above mentioned, according to the time of the solar month, then double the remaining number of feet and add 12 more; and make this sum a divisor, and 180 its dividend. The quotient is the number of *peyas* either from the

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sun-rise, or to the sun-set, as the case may be. If there be any remainder after the above division, multiply it by 60, and divide the product by the same divisor for *winádi*, and so for *tatparas*. Thus on the fifteenth day of April, in the morning, if I see my shadow to be 20 of my feet, I proceed thus to find the *peya*. It being only about two days after the Sun's entering into *Mésha ráșiya*, the *awachchháwa* is 1½ ft., which I take off, and the remainder, 18½ ft., I multiply by two, which gives 37, I add to this 12, and the sum left is 49. I then divide 180 by 49, thus:

```
49) 180 (3 p.
    147
    ---
     33
     60
    ----
49) 1980 (40 w.
    196
    ---
     20
     60
    ----
49) 1200 (24 tat.
     98
    ---
    220
    196
    ---
     24
    ---
```

and find that the time is 3 *p.* 40 *w.* 24 *tat.*, in the morning, or, according to the English way, 28′ 10″ after 7 A.M.

A more simple way than this, though not so correct, is that after taking away the *awachchháwa* "the extra shadow," the following numbers of feet stand for each *peya*, either from the sun-rise, or to sun-set, as the case may be, namely 84, 49, 24, 16, 12, 9, 7, 5, 4, 3, 2, 1½, 1, ½, 0. Thus in the former case 8½ ft. after the *awachchháwa* has been taken away, being between 24 and 16, is between 3 and 4 *peyas* from sun-rise.

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To reckon the time when the sun or moon is not visible, they have a cup called *pę-tętiya*, made of some kind of metal, or coconut shell, with a small hole in the centre, which will fill in just in one *pęya* when placed in a vessel of still water.

The Siṇhalese speak of the time of the day in a different mode from what the English do. They do not say, "It is three o'clock," or three on the clock. This mode of expression must be of a comparatively recent date, as clocks and watches were not in use at a very remote period. There is an unidiomatic and corrupt way of speaking of time, among the Siṇhalese, in the neighbourhood of towns, inhabited by Europeans and their descendants; such as, "*Dęn kiyada? Pahayi*," "How many is it now? Five" Meaning, "What is the hour now? Five" This mode of conversation concerning time is unintelligible among the Siṇhalese people of the villages, who have less intercourse with Europeans and speak the language in its purity. Their question, in the place of "What o'clock is it now?" is thus;—"*Dęn eliwęṇḍa* (or *eliwelá*) or *réwęṇḍa* (or *réwelá*) *ki pęyada?*" "How many *pęyas* is it now to be morning? (or since morning,) or to be night, (or since night)?" Sometimes, speaking with respect to the feet of the shadow of the Sun or Moon, they say: "*Dęn ira* (or *handa*) *mudunaṭa ęṇḍa* (or *hęrilá*) *doḷos piyawarayi*."—"It is twelve feet the sun (or moon) to come to the top (or having turned.")

REMARKS ON THE SUPPOSED IDENTITY BETWEEN NÁGASÉNA AND NÁGÁRJUNA.

BY JAMES DE ALWIS, ESQ., ASSISTANT SECRETARY.

ORIENTAL scholars have long entertained the belief,* that Nágaséna, the hero of "Milindappraṣna," and Nágárjuna, the character who holds a distinguished place in the "Rája Taraṅgiṇí," were identical. Curiosity, however, led me to read the original passage on the Kashmirian history, and the discordance in the rhythm of several lines, to examine it closely. In the course of that examination, I have detected several grave errors in the construction put upon the passage in question, which I beg now to record, with the object of awakening the attention of Oriental scholars, who are better qualified than myself, to the investigation of a subject, which is not only interesting but difficult.

The passage in question, which I extract from the Asiatic Researches, Vol. XV., p. 111, is the following:—

> Té turushkànvayòdbhùtà ; *pi* punnyàsrayà nṛipàh
> Ṣushkak*shé*ttràdi dèṣéshu ; maṭha chaittyàdi chakkrirè.
> Pràjjiyè ràjjyakshanè tèshàn ; pràya*Kàṣmira maṇḍalan
> Bhòjjya màstè*sa bauddhánān ; pravrajj*yòrjita tèjasan.
> Tatò bhagavatah Ṣàkkya ; Siṇhasya puranirvritè
> Asmin saha lòka dhàtaw ; ṭàrddhan varsha satan byagàt,
> Bòdhisatvascha dèṣèsmin ; nèka bhùmiṣvarò *bhút*
> Sa*cha* Nàgàr'junah srìmàn ; shad*arhatva* nasanrayl.

* See Bombay Asiatic Society's Journal, No VIII. October 1844, p. 96.

Professor H. H. Wilson, in Appendix VII. to his Essay on the Hindu History of Cashmir, thus translates the passage which I have above extracted:

"They (Hushka &c.,) of *Turushka* descent, were princes, asylums of virtue; and they founded colleges and planted sacred trees, on Sushca and other places. During the period of their reign, the whole of Cashmir was the enjoyment of Buddhas eminent for austerity. After them, when 150 years had elapsed from the emancipation of the Lord Sácya Siṇha in this essence of the world, a *Bodhisatwa* in this country, named Nágárjuna, was *Bhumisware*. (Lord of the earth,) and he was the asylum of the six Arhatwas."

The Hon'ble Mr. Turnour, with that zeal in the cause of oriental research, for which he was eminently distinguished, and with a view to identify Nágárjuna with Nágáséna, and to adjust the date here given to that assigned to the latter in Bhuddhistical annals, has* corrected the text in two most important particulars: 1st, by prefixing *da* to *sardhan varsha satan*, "one hundred and fifty years," and converting the passage into *dasardhan varsha satan*, "half-a-thousand years;" and 2ndly, by giving to the concluding portion of the Sanskrit quotation, which Professor Wilson has rendered "He was the asylum of the six Arahatwas," a negative signification—conveying that he did *not* recognize (*i. e.* he *denounced*) the six Arahatwas; and by identifying them with the six Tírtakas mentioned in the "Milindapprasna." The entire translation which Mr. Turnour has offered, runs thus:

"They (Hushka, Jushka, Canishka) of Purushka descent were princes, asylums of virtue, who founded colleges and chetiyas in Suscha and other countries. During the entire period of their rule, the whole of *Cashmir* was under the spiritual controul of ascetic sages, eminent for their rigid piety Thereafter, when (half a thousand) five hundred years, had elapsed in this (land) as well as the whole world, from the period that the sanctified Ṣákya Siṇha attained *Parinirvritti*, the pre-eminently endowed *Bódhisatwa* Nágárjuna, became the (spiritual) Lord of this and many other lands, and did *not* recognize (*i, e.* denounced) the six Arhatwas (who were his contemporaries.)"

* See Bengal Asiatic Society's Journal for 1836, p. 530.

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Before remarking on the important alterations thus effected by Mr. Turnour, it may be necessary to examine the original text, and to notice the fact, that it is written in that most frequent and useful form of Sanskrit verse called the *Anushtubh* —a metre "in which the great body of metrical composition, whether narrative or didactic, exists"—a metre too, in which "the laws of Manu, the Mahábhárata, the Rámáyaṇa and the Puráṇas are written." The species under notice is thus defined:—

"The *Anushtubh* stanza is divided into four *pádas* of eight syllables each. In its most regular form, the first foot is any one except a tribrach, the second may be a dactyl, a tribrach, cretic or anapæst; the other two syllables are indifferently long or short."

Another peculiarity in the formation of the *Anushtubh* is, "that the fifth syllable of each line is short, the sixth long and the seventh alternately long and short; whilst the first four syllables and the eighth are arbitrary."

By reducing the passage in question into symbolical figures, it will be perceived at a glance, that there are three prosodial errors;—one in the 2nd line; another in the 11th; and a third in the 14th; whilst the 12th line, in which it is stated that *da* is omitted before *sárdhan*, and the 16th, which is said to contain a dennuciation of the six Arahatwas, are clearly free from prosodial errors. Two of the errors which I have noticed are of a trifling character, as they may easily be rectified without adding anything to the sense. The letter *a* in *api* "afterwards," with which the 2nd line of this passage commences, is omitted; when added, the line runs thus:—

Api punnyáṣrayà nripàh :— — ⌒ ⌒ — ⌒ — ⌒ = 8.

The 14th line is thus correctly rendered in the Nágari version of the "Rája Taraṅgiṇi" printed at Calcutta in 1835; and I at once adopt it, as it is free from error.

Nèka bhùmìṣwarò *bhavat* : ⌒ — ⌒ ⌒ — ⌒ — ⌒ = 8.

In the 11th line there is an unaccountable confusion, both in

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the Nágari version, and in the extract published by Professor Wilson; and I confess that it is impossible, without materially altering the sense, to redeem it from the palpable inaccuracy of rendering the 5th a *long*, and the 6th a *short* syllable.

Asmin saha lóka dhátaw: ⌒ ⌒ — — ⌒ — ⌒ ⌒ = 8.

I have thus examined the entire passage in reference to the rhythm. It therefore only remains to consider the correctness or otherwise of the criticisms offered by Mr. Turnour.

With regard to the 12th line—if, as stated by Mr. Turnour, a *d* with its inherent vowel is introduced, and the whole line is thereby rendered *dasárdhan varsha satan hyagát;* it will be perceived that we not only destroy the harmony of the entire verse, but render the line 9, instead of,—as it is, and ought to be—8 syllables.

Sárdhan varsha satan hyagát: ⌒ ⌒ ⌒ — — ⌒ — ⌒ = 8.

As to the last line,—*shadarhatva na-sanshrayí;* it is stated that Professor Wilson has lost sight of the negative *na*. Mr. Turnour can scarcely be deemed correct in offering this criticism; and on reference to the text we also find that Professor Wilson has incorrectly *extracted* the passage. It should be (see original) *Shaḍahar vana saṉsrayí*, which means, "he was one who spent six-days in the wilderness." To render the passage as Mr. Turnour has translated it, "he denounced the six Arahatwas" the word *arhatwa* should be either *arhatwan*, the accusative, or *arhatwasya*, the genitive.

The passage given in the Nágari original furnishes no great objection in point of grammar—certainly none in regard to rhythm; and is altogether such as may be reconciled with the doctrine of *Niródha Samápatti* in Buddhism, by which it was incumbent on the ascetic, who had attained the state of "Arahat" to spend six days in seclusion in the wilderness, and on the seventh to leave it in search of food.

Seeing, therefore, that the two most important coincide[nces] between the Kashmirian and Buddhistical annals to which [Mr.] Turnour refers, do not really exist, it may be inferred, that his

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other reasons for the identity of Nágárjuna and Nágaséna, founded especially, as they are—on "hypothetical reasoning," lose much of the weight due to them, if they do not altogether fall to the ground.

I shall, however, postpone a consideration of them to an early opportunity, contenting myself at present with a translation of the passage in question, which I append:—

"It is said that they (Hushka, Jushka, Kanishka) of Turushka descent, were princes, who were embued with the virtue of merit,* and who afterwards founded Colleges, chétiyas, &c., in Sushkaléttra† and other countries. During the period of their extended reigns‡ the country of Kashmir was greatly under the spiritual control of Buddhistical ascetics, preeminent for their rigid piety. Thereafter, when a century (one hundred years) and a half had elapsed in the essence of this world, after the sanctified Sákya Siŋha obtained final emancipation *(Puranirwritte)*§, there appeared in this country a Bodhisat *(anéka bhumiṣwara)* lord of many lands. This distinguished personage, who was named Nágárjuna, usually spent six days (in the week) in the wilderness."‖

* "Embued with the virtue of merit" means that they betook themselves to a course of religious austerities, by which sin was avoided, and attained a status for acquiring merit.

† *Sushkaléttrádi*. I have translated *Sushkaléttra*, &c. This is the form in which the word occurs in the Nágari version. It may be either one name or two. And this expression, rendered *Shushkakshéstrádi* by Professor Wilson, may also stand for one or two names. It may either stand entirely as a name, or be rendered "the valley *(Kshettra)* of Sushka, &c."

‡ "Extended reigns." The word *prájjiyé* rendered by me "extended," is interpreted by Mr. Turnour to mean "entire," and it is omitted in the translation of Professor Wilson. It is, however, remarkable that this word is ill-adapted in its present position as an adjective to qualify *Rájjyakshané*

§ *Puranirwritte*. This is undoubtedly *Paranervitta*; and Professor Wilson's alteration was as indispensable as correct.

‖ *Shadahor vana sanshrayé* is rendered in Professor Wilson's extract, *Shodarhatwo nasanshraye*. See my remarks in the Text.

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AN INTRODUCTORY PAPER ON THE INVESTIGATION OF SINHALESE MUSIC.

By Louis Nell, Esq.

The Ceylon Branch of the Asiatic Society, formed to institute and promote enquiries into the Arts of Ceylon, together with the social condition of the present and former inhabitants of this Island, would embrace within the scope of those enquiries, the investigation of Siṇhalese music,—since it is peculiar to the Siṇhalese, and because it is calculated to throw some light upon the social condition of the people. Their Music is as peculiar to the Siṇhalese, as the music of any other people, to them. The Oriental enjoys his rude melodies, as heartily as the European, the music of the West. But the difference is so great between the barbarous and the civilized art, that the former becomes a subject of curiosity to the votary of the other. Though Siṇhalese music, therefore, may be of no great intrinsic value, it is deserving of investigation as a national art, and as an illustration of the social condition of the Siṇhalese people. It is hardly necessary to illustrate this position, by alluding to the marked characteristics of Scottish and Irish music; or by contrasting their national character with that of the music of Italy. Nor will it be necessary, to make more than a passing allusion, to the effects of musical culture in Germany, in the Tyrol, and in Switzerland. It will not be denied, that the influence of music is calculated to take hold of the affections: nor will its moral influence be denied when the value which has been placed on it by religion, is but for a moment considered. The investigation of Siṇhalese music, therefore, is worthy of the attention of this Society.

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With regard to the estimation, in which music was held, in comparison with other branches of knowledge, it may be, observed;—That the "Rája Ratnákara," ascribes to a favorite Siŋhalese prince, a knowledge of the following branches of Eastern Science;—1 Oratory; 2 General knowledge; 3 Grammar; 4 Poetry; 5 Knowledge of Languages; 6 Astronomy; 7 Knowledge of giving counsel; 8 Of obtaining *Nirwána;* 9 The knowledge of good and evil actions; 10 Of shooting; 11 Of Elephants; 12 Discernment of thoughts; 13 Discernment of invisible beings; 14 Knowledge of words; 15 Knowledge of history; 16 Of the law; 17 Rhetoric; and 18 Medicine. *(Upham II., 99-100.)*

It is probable, that had music been held in higher estimation by the partial historian, he would have added it to the others, by which the memory of Parákrama Báhu the 3rd, is adorned in the page of Siŋhalese history.

It is probable that many attempts have been made to reduce Siŋhalese melodies to European notation; but the silence which has been hitherto preserved on the subject, must be interpreted as a tacit acknowledgement of failure. The fullest account of native music and musical instruments, is that given by Davy, whose work on Ceylon ranks next to that of Knox for originality and correctness. Davy gives a description of seven native musical instruments,—1 *beragediya*, 2 *dawula*, 3 tom-tom, 4 *uḍẹkkiya*, 5 *talliya*, 6 *horaṇẹwa*, and 7 *v'ṇáva*. It may be here remarked, that all these are Siŋhalese instruments; and that the brother of Sir Humphry Davy, with the carefulness of a scientific enquirer, has not confounded them with Malabar instruments, or added any foreign ones to his enumeration. It would be unadvisable perhaps, to incorporate the remarks of Dr. Davy, in this paper, since the work itself could always be referred to.

My succeeding remarks will be of a more practical nature, as they were suggested by actual experiments; the results of which, however, have not been extensive enough to justify [illegible]tion.

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It will follow from observations already made, that no such results have been arrived at by writers on Ceylon, as were obtained by Lane, in his "Modern Egyptians." He gives a few instances, in European notation, of Egyptian airs, including the "call to prayer" at Cairo, the style of chanting the Korán, and some specimens of secular songs. In attempting such results in Ceylon, the very first difficulty would be, the unsuitableness of the European musical scale to express the exact nature of the sounds, which form the strains of native melodies. This is, perhaps, not generally known. To explain the reason would involve a consideration of the leading principle of musical acoustics, and of the theory of the musical scale. But before doing so, a favourite speculation must be dismissed. It is a favourite method on such enquiries as the present, to speculate on the probable character of Hebrew, ancient Egyptian, and Grecian music. This course, though seemingly going to the root of the matter, will give no practical results. I believe I am not incorrect in stating, that all certainty in the history of music dates from the discovery of our modern notation. This may be described, as, the system of designating musical sounds by points, distributed on lines and the spaces between them; which system, when once acquired by a musician, enables him to read melody and harmony, and to reproduce exactly what has thus been written. This definition, I believe, will at once exclude any ancient Eastern notation, as well as the system of using prosodial feet.

The application of the principles of musical-acoustics to this investigation, may be illustrated as follows. We shall take the instance of a person, endowed with a correct ear, and possessing a moderate degree of skill in performing on the German-flute. We shall, also, suppose him to listen, with curiosity, to the performance of a native musician; and to endeavour to catch the air being played, on his own instrument. To any one, who has tried the experiment, it is needless to foretell its failure. Let us suppose our amateur, to ask himself the reason, why? The easiest solution of the difficulty

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will be found in a comparison of the two instruments. Not in the finish and perfection of the one, and the native rudeness of the other; but in the acoustical proportions of both. He will find, to his surprise, that the vents of his own instrument are apparently placed in the most arbitrary manner, with regard to their relative positions; while on the other hand, the despised native instrument is vented with more mathematical regularity. In seeking a scientific explanation, we should begin from the most elementary principles.

Musical tones are supposed to be the results of ærial vibrations, proceeding from a central vibrating body. Under the influence of the same motive force, the relative number of vibrations has been found, to be in the inverse ratio of the dimensions of the vibrating body. Thus, in the case already considered, the relative number of vibrations (producing the different notes) is in inverse ratio to the length of the column of air in the flute. The average diameter of the flute throughout its length being supposed to represent an uniform diameter, and beginning by closing all the vents, as each successive vent is opened, the length of the column of air in the flute tube is reduced in the same proportion. Sounding the instrument with the same force, it will be found, that the shorter the column the more acute is the note. And, as already stated, the vents being placed at irregular distances, the musical sounds produced, are at irregular intervals from each other. But the native instrument, having its vents bored at regular distances, will emit notes at regular intervals of acuteness. The reason why the sounds of the latter are so unpleasant to our ears, will appear, when we consider the theory of the musical scale.

Taking the natural scale of C major, we find, that it consists of seven unqualified notes, designated by the seven first letters of the alphabet, in the following order, C, D, E, F, G, A, and B. The intervals or musical distances between these notes are not equal, since those expressed as $\frac{C}{D}$, $\frac{D}{E}$, $\frac{F}{G}$, $\frac{G}{A}$, and $\frac{A}{B}$, are known as tones; while those expressed as $\frac{E}{F}$ and $\frac{B}{C}$ are

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half tones. On examining the German-flute, the vents will be found to bear a corresponding relation to each other. Besides this peculiarity, it has been found, that the scale of seven notes, possesses another inequality. Dividing the scale into two tetrachords, expressed as C. D. E. F. and G. A. B C.—it is asserted, that there is not a strict mathematical equality between the two divisions. Though all assume this equality for practical purposes, there seems to be reason to suppose, that in this want of symmetry is hidden a key to the difficulty of tuning compound instruments like the organ and the pianoforte. And I further beg to remark, that the necessity for what are called "the golden rules" of harmony, has probably arisen from the difference, thus established by nature. There is no doubt, that the scale af intervals, as above described, is pleasing to an European ear. When it is considered, also, that in the course of improvement, the European instrument must have resulted by gradual perfection from its rudest and simplest form,—we should consider it, as the result of endeavours tested by the criterion of a good ear, and assimilated to the standard of existing ideas. The native musician, however, by a timid reliance on mathematical intervals, has established an unnatural scale, to which his ear has been attuned by the force of habit. The European instrument is the creature of science: the native art is the creature of its instrument.

The scales of European and native music, are therefore, essentially different. And the idea which is sometimes entertained, that Siŋhalese music is in the minor keys, is a libel on the music of the West. European airs, both in the major and minor scales, are vented by the same instrument. Thus, there are intermediate vents for the chromatic semi-tones, introduced in the eight-keyed flute. The notes sounded by these vents may accidentally coincide with those produced on a native instrument; but the acoustic and musical intervals will be found essentially different.

It follows from the preceding considerations, that in investigating Siŋhalese music, the most perfect native instru-

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ments should be obtained, their gamut ascertained; and, if necessary, a new system of notation adopted, every note of which should have a defined value and relation to the European musical scales. In obtaining instruments, Tamil ones, should not be confounded with Siṇhalese. Tamil music is I have no hesitation in saying, essentially diatonic in its character. And I could illustrate this by quoting an instance of an air, which I have myself heard sung by Malabars, which has been set to English words, and also incorporated in a set of Quadrilles by the omnivorous Jullien. It is well known, also, that Hindoo airs have not only been written in the European notation, but harmonized; which latter circumstance alone would be a test of unfailing efficacy.

In conclusion, I may indicate the means, by which I consider the investigation proposed, could be carried out by this Society.

1st. By the addition to the Society's Museum of a complete collection of Siṇhalese instruments, duly authenticated.

2ndly. By the contribution to the Society's Journal, of short accounts of native musical notation.

3rdly. By the reduction to writing, of native melodies, using, if necessary, a peculiar musical scale.

The enquiry should be carried on with scientific curiosity; and the prejudices of the native should not be ridiculed, who delighted with his tom-tom, stops not to enquire the cause of his enjoyment. To him "nothing is so tranquilizing as sweet poetry and the gentle *uḍekkiya*."

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A SYNOPSIS OF THE "SAIVA SITTÁNTAM."

BY M. COOMARASAMY, ESQ., ADVOCATE.

OF the various systems of Philosophy in which Hindú literature abounds, one of the most important is *Saiva Sittántam.* Although the doctrines which it propounds are strictly esoteric, and calculated for the comprehension and enlightenment only of those who have been initiated into its mysteries, yet it is this system which forms the groundwork whereon the huge fabric of Hindú popular theology is based. It thus becomes the fountain head, whence the religious creed of millions of Hindús in India and Ceylon is derived. As such, it is worthy the attention of the public. The subject, however, is too extensive to be dealt with, in all its ramifications, within the limits of this contribution, and this crude attempt will therefore be confined to a rough pencilling out of the most prominent features of this vast panorama of literary and metaphysical grandeur.

It aspires to a divine origin, and assumes the authority of a direct revelation from God, it being asserted that "*Sivan* (God), through his chamberlain *Nanti*, revealed to *Sanaṭkumáran* in consequence of his high devotion, the system of sacred science, called *Raurava Ákamam.*" This *Ákamam* is the principal authority on this subject, but the matter contained in it has likewise formed the theses of innumerable treatises of extensive learning and research, written by some of the most highly gifted men of genius of both ancient and modern Hindústan. The Tamil *literati* of Southern India have been particularly active in this department of human knowledge; and the results of their labour have been handed down to posterity in works clothed with the best, but the most difficult, strains

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of the rich and lofty *Chen* Tamil.* Amongst these, *Siva Ñána Pótam*, by *Meykaṇḍa Náyanár*, *Siva Ñána Sitti*, by *Aruṇanti Náyanar;* and *Sivappirakásam* by *Umápati Asiriyar*, are held in the highest esteem. Our information will be traced chiefly from these sources.

The style of these writings is didactic, and they contain the best examples of Hindú dialectics, which, *en passant*, are considered by some to be at least an expansion of the syllogism of Aristotle, if not the origin thereof. It is no easy task even for the learned amongst the Tamils, to understand fully, and expound clearly and correctly, these elaborate treatises; and it must be confessed, that the effort to reproduce the ideas and sentiments contained in them, in an English garb, and in a manner acceptable and interesting to all, is not less difficult.

Saiva Sittántam professes to treat of

I. *Pati* —GOD.
II. *Pasu* —SOUL.
III. *Pásam*—FETTER, CHAIN.†

An accurate and complete knowledge of the nature and bearings of these three subjects, denominated otherwise, *Tripatárttam*, is of essential consequence, in the eyes of Hindú *savants*, for the attainment of the only true object of this life ——the *Mutti*, or heavenly bliss in the other.

God, Soul and *Pásam* are the three eternal and imperishable entities, whence the universe and all its chequered phenomena have sprung forth into existence, and whereinto all and every one of them will be ultimately resolved.

Attention will be directed to each of them in their order.

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* There are two kinds of Tamil—the one, High Tamil, called *Chen* Tamil—the other, Low Tamil, called *Koḍun* Tamil.

† Lit. "fetter" "chain," that which keeps the soul originally in a state of bondage and ignorance. This will be more fully explained hereafter.

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I. *Pati*—God.

Pati is but one of the many names by which the supreme God is known to the Hindús. He is also called *Piramam*, *Parappiramam*, *Para Sivan.* The last term gives the characteristic name to the School of Indian philosophy under notice.

The existence of such a being, as the Creator of the World, is proved by means of various arguments. One of these happens to be identical with the argument which was first advanced by Socrates, but afterwards fully expounded in Paley's memorable work on Natural Theology. It is comprised in the following stanza from *Siva Ñána Sitti* :—

"As the whole world which is known under the designations of *He*, *She*, *and It*, comes into existence (without having existed previously), exists, and is destroyed, in an *orderly* manner, (it follows) that there is one who is the creator of this world, and who is the beginning and end in himself. His existence is permanent, and he is in the form of a spirit freed from *(Pásam)* evil from eternity."

This stanza admits also of a construction from which some commentators raise a fresh argument for the necessity of a Creator of the Universe. The reasoning is to the following effect:—

1. The world is not eternal: *consequenter*,
2. It had a commencement and did not exist before such commencement : *ergo*,
3. It could not have created itself; it requires some cause other than itself to bring it into existence.

The nature of God is to the following effect:—

Though God pervades the whole world, yet He is other than the world; for He is spiritual, and the world is material.

As sound and the tune, God and the world. As sound is to the tune, filling all its notes, so God is to the world, pervading all its forms.

As the fruit and the flavour, so God and the world. As flavour pervades all parts of the fruit, so God pervades the world from the first.

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He is in intimate union with the Soul, yet He is other than the Soul.

He is eternal, pure, has no equals or superiors.

He has neither qualities, nor names,—is omnipotent; is omniscient; is the source of understanding to innumerable souls; is illimitable in His nature; exists in the shape of *Ńánam* (divine wisdom); is the form of happiness; is difficult of access to unstable worshippers, but is easily approached by those who worship in the regular course; and shines as the least of the little and the greatest of the great."

The proof for the existenec of a Creator, and the refutation of the tenets of *Lokáyatar*, (the Indian Epicurean philosophers), and of other sects who maintain atheism, and attribute the world to chance, occupy many stanzas teeming with apt illustration and ingenious arguments in *Sitti*.

The next subject in order is

II. *Pasu*—Soul.

The existence of a Soul within the human organism, and as different from "mortal coil," is established by what is called *Oḷivu*, "the rule of exception," in Hindú Logic. The argument on this subject is as follows:—

A man says "this thing is mine," "that thing is not mine." Here it is evident that there is a thing owned or not owned, and a man owing or not owing. In the same manner, it is often said "this is my body," "this is my face," "this is my hand." Here it is obvious that there exists something apart from the body—the face and the hand—and owing them: this is the Soul. Again it is usual to say "I thought so," "I did so," "I said so." Here also there exists something other than the thought, the deed, and the saying: this something is the Soul.

There are also other arguments given for the existence of the human soul. These are based chiefly on the phenomena of Death and Sleep. They are to the following effect:—

1. At Death, all animation becomes extinct, through the human frame is left entire; *consequenter*,

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2. Animation must be traced to some other source than the human frame.
3. This source is the Human Soul.

As to the nature of the Soul. It is not God, nor an emanation from God, as the Vedántists hold. It is an individual being: and eternal one, being uncreated and immortal. Souls are not one in essence, as some maintain; but are manifold and imperishable. In their primordial state they are not only unintelligent but even unconscious.

The third head of enquiry is

III. *Pásam*—(FETTER, CHAIN.)

This *Pásam* is that which as it were binds the soul to a state of bondage, unconsciousness and ignorance, in its original state. It is subdivided into three parts. These are,

1 *Áṇava Malam.*
2 *Máyá Malam.*
3 *Kámiya Malam.*

Aṇava Malam is the source of unconsciousness and ignorance to the soul.

Máyá Malam is that which operates in the removal of the unconsciouness and ignorance of the soul, by becoming the material basis of the universe and man.

Kámiya Malam is the accumulation of merit and demerit acquired by the souls in their previous states of development in organised forms.

The term *Malam* means rust or dirt: the three *Malam* forming the rust or dirt of the soul in its original state of non-development.

Pásam exists from eternity and is imperishable, except so far as *Máyá Malam* and *Kámiya Malam* are concerned. When the two latter are removed from the soul, and *Aṇava Malam* loses its strength, then the soul will be liberated from the grasp of *Pásam*, and be ripe for attaining *Mutti* or heaven.

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IV. The Relation between God, Soul and Pásam.

God exists from èternity, alone, by himself, apart from the Soul and *Pásam*. But the two latter are linked in intimate union with each other—*Pásam* enveloping the Soul. This abnormal condition of the Soul is from eternity. It is unaccountable. It is a mystery. Here the Soul lies in a state of bondage, denuded even of thought.—In consequence, it is miserable and unhappy. This relation of *Pásam* to the Soul is analogous to that which subsists between the husk of the paddy and the rice which it envelopes, or between the rusty coating and the copper which it conceals.

This link between the Soul and *Pásam* is not, however, indissoluble. The chain will be severed—the soul will gain its freedom. It will ultimately be drawn away from the grasp of the Archangel of Evil—*Pásam*, and be received into the bosom of the *summum bonum*—God. It will then shine in its true and resplendent glory in the august presence of the King of the Universe—even in mystic union with *Parappiramam*. This is *Mutti*. Here the soul does not lose its individuality, nor is it annihilated. But it exists in *Attuvitam*—unity in duality. This is called *Sáyucchiyam*—the heaven of the Saiva Sittántists, as *Nirwána* is that of the Vétántists and Buddhists.

V. Man.

To break through its thraldom the soul had not the power. But God, who is "an Ocean of mercy," pitied the soul in its distress. He willed that the soul should be freed from the clutches of *Pásam*, and simultaneously with the will, the fiat went forth, that the soul should be developed in human organism, or in other words, that man should be created. In this manner the soul descends to this universe, for it is here that the course lies where the soul is to run its race from the goal of evil—*Pásam*, to the goal of good—God. Creation is not one of the "beautiful plays of God." It is pregnant with a serious purport. Its object is the deliverance of the soul;

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for *Pásam*, before it will relax its hold on the soul, demands satisfaction for the loss it sustains in parting with it. The demand has been met by summoning this world and man into existence. And here, when he shall have "balanced off his demerit by his merit"—his evil deeds by his good deeds —he will then, and then alone, stand in a position fit for liberation.

The development of the soul in the human organism, is, according to this system of philosophy, curious, if not interesting. It views man as a microcosm. All the essential constituents of the bundless universe are coiled up likewise proportionately in puny man. And as God is the King of the Universe, so is the Soul, the king of the miniature universe—man.

Man is said to be composed of ninety-six *Tattuvam*—a word, which like many other technical terms of this school, does not admit of being rendered in English, although the words, "category, principle, power, organ, property," approximate it in meaning. The order in which the *Tattuvam* are evolved from *Pati* and *Pásam*, their names and their characteristic properties, and the parts which they are intended to play in the human organism, are given with great minuteness in the works above mentioned. But notice will here be taken of only the principal *Tattuvam*.

By the grace of *Pati* there was developed from *Sutta Máyai* —pure elemental matter which was united with deity from eternity—*Nátam*, the male energy of *Pati*: from *Nátam* was evolved *Vintu*, the female energy of *Pati*: from *Vintu*, *Satákkiyam*, in which both the male and female energies inhere: from *Sátakkiyam*, *Ísuran*, the obscuring God: and from him, *Uruttiran*, the destroying God. These divine developments are associated with the soul with a view of prompting it on towards final deliverance.

For the use of these developments, and for the purpose of drawing the soul out from its state of unconciousness, as it exists imbedded in *Pásam*, into a state of intelligence and

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activity, there are evolved, from the above mentioned *Vintu*, the four *Vákku*, which may be translated "organic bases of intelligence." These are

1 *Súkkumai.*
2 *Paisanti.*
3 *Vaikari.*
4 *Mattimai.*

All these were unfolded from pure elemental matter, and by the agency of Pati. The productions that follow were drawn out of *Pásam*—impure elemental matter—and by the instrumentality of the divine developments detailed above.

By the grace of *Satákkiyam*, there are evolved from *Asutta Máyai*, impure elemental matter,

1 *Kálam*—Time.
2 *Niyati*—Fate.
3 *Kalai*—Continency.

Kálam attaches to souls the results of past time, the fruit of the present time, and whatever is new in future time. *Niyati* will make sure to souls their respective *Kanmam*, *i. e.*, the due meed for their good and bad deeds. *Kalai* operates to a certain extent in the removal of *Pásam*.

From *Kalai* are developed,

1 *Vittai*—the power of thought; and from *Vittai*,
2 *Rákam*—the desire to relish the pleasures of sense, which was necessary to make the souls eat the fruits of merit and demerit.

Again, by the grace of *Uruttiran*, *Pirakiruti* is evolved from *Kalai*. From *Pirakiruti*, which is the material basis of the subsequent productions, spring the *Mukkanam*, the three moral properties, viz.:—

1 *Sáttu Vikam*—(lit. "goodness.") This prompts the soul to divine wisdom; to truth and love.
2 *Rásatam*—(lit. "passion.") Here lie the propensities to pride and selfishness.
3 *Támatam*—(lit. "darkness") cause of laziness, stupidity, drowsiness.

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The position of the three moral qualities, as they exist undeveloped in *Pirakiruti*, is called *Aviyaktam*. From this is evolved,

1 *Sittam*—the thinking principle. From *Sittam*,

2 *Putti*—judgment. And from *Putti*,

3 *Akaṇkáram*—This is the individualizing principle.

This *Akaṇkáram* is threefold, viz.

1 *Taisatha-akaṇkáram*, wherefrom *manam*, (mind) the understanding and the five perceptive organs are evolved.

2 *Vaikari-akaṇkáram*, wherefrom "the five organs of action" are evolved. These are the mouth, the feet, the hands, and the excretory organs.

3 *Putáti-akaṇkáram*, wherefrom the five rudimental elements are evolved. These are Sound, Touch, Form, Taste, Smell;—these are called *Tanmáttirai*.

From Sound is evolved ether; from Touch, air; from Form, fire; from Taste, water; from Smell, earth.

These are the essential items that make up man, and from these above enumerated *Tattuvams*, many other subsidiary ones are developed to make up the 96 *Tattuvams*. This part of the *Saiva Sittántam* often proves difficult to many, and an incipient Hindú philosopher devotes the first months of his study to an investigation of it.

The intelligent and active state of the soul is called *Sákkiram*, when all the 96 *Tattuvams* are in full vigor and play, and when the soul takes its seat in the forehead between the eyebrows. *Soppanam* is the state when a man is asleep. Here all but twenty-four of the *Tattuvams* are lulled into inactivity, and the soul descends to a seat in the neck. It experiences here only what it had seen in *Sákkiram*. This is the phenomenon of dreams. *Sulutti* is the stage below *Soppanam*. Here the soul exists in the heart in company with only two *Tattuvams*—the will and the vital principle. The soul is incapable of distinguishing any thing here. From this, the soul drops down into the navel, and exists in the state

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called *Turiyam*, in union with the vital principle alone. Here it ceases to think. Next below is the *Turiyátítam*, where the soul descends deprived of even the vital principle. This is Death.

The polar star of life is then, according to this Philosophy, the deliverance of the *Pasu* from the *Pásam*. But *Pasu* soon loses sight of this object. The soul once set in motion in the human organism revolves on from life to death—from death to life,—from birth to birth,—from age to age,—ever bounding away from God, and never rebounding towards him; as if it were a planet of the solar system actuated by some chance or other by the centrifugal force alone, without the co-operation of the centripetal force likewise; until its wayward course is arrested and a new direction given to it toward the centre of the orbit—even *Pati*—"the Sun of wisdom." This takes place at last when the soul's merit and demerit *(kanman)* have been cancelled, and there is no residue left to be eaten up at future births. Then there will be a cessation of births, and the soul will be ripe for liberation. The state of a man who has arrived at this phase of existence is called *Tivira Satti nipátam*. It is thus described in *Sivappirakásam*:— "For such a man this world will possess no charm. He will ignore it. He will loathe his own body in the same manner in which the bearers of a worm-eaten corpse will detest it, when, on their way to the burial ground, the worms fall on them. When he finds himself in union with the warring mental faculties within his bosom, he will feel like an elephant in the paw of a lion. When he sees that he is in co-operation with the organs of sense and the organs of action, he will cry out like a frog in a snake's mouth. The way in which he will fear the influence of his family and friends, and leave them, is like that in which one, who has lain down to rest without knowing that there was a snake in his bed, will on awaking and seeing the snake, hasten away with terror; or like that in which a person whose house is on fire, leaves his goods and hastens to escape by some way or other which he sees."

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The following stanza, from *Siva Ñána sitti*, gives with great pathos and beauty (which are however lost in a translation) the manner in which God will reclaim the lost soul.

"As a king, whose son had stayed away from him and lived in ignorance of his father amongst the *Véḍḍs* (wild men), will, on discovering the son, exclaim to him 'Come to me, oh, thou darling child of mine!' and make him a participator of the happiness that he (the king) himself enjoys; so even will the Supreme God present himself before the soul when in distress, from being enmeshed in the net of the five *Vétas* —senses, and severing the soul from Pasam, will assimilate it to himself and bless it with his holy feet."

Such is an imperfect *résumé* of the *Sáiva Sittántam*. A greater amplification of the subject is reserved for a future contribution, where the intimate connection that subsists between the *Sáiva Sittántam* and the popular form of religious worship that obtains among the Hindús of the present age, will engage our attention.

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TERMS OF ADDRESS AND MODES OF SALUTATION IN USE AMONGST THE SIṆHALESE.

BY JAMES ALWIS, ESQ., ASSISTANT SECRETARY.

THERE is not perhaps a greater difficulty experienced by Europeans* in their intercourse with the Natives of this country, than that of correctly applying the forms of salutation and address known amongst them. Often have we suppressed a smile forced upon us, on hearing European authorities address a peon or other servant thus: "*Pion ara pota gen-eṇṭa*," "*Mudiyanséṭa aṇḍagahapan*," "*Árachchiṭa kiyápan*," &c. Frequently, too, have we heard Europeans enquire with indignation, whether certain terms as applied by their Interpreters to witnesses were not insulting or offensive. Not long ago the native portion of an entire Court was much amused on hearing counsel in his address to the Court, apply the term *Walawwa* to indicate the residence of a poor low caste person, his client. The difficulty of acquiring the proper use and application of terms of address, so as on the one hand not to offend, and on the other not to give too much respect, to the person addressed, seems to have been so greatly felt by Mr. Justice Stark, that he has devoted considerable attention to the study of the subject. The interesting information which he acquired, he has embodied in a paper which is found published in the Ceylon Asiatic Society's Journal for 1853. That paper, gives the reader an imperfect account of the numerous forms of salutation and address used by the Siṇhalese. As

* "No people of the East are more critical as to style, or more fastidious as to terms, than the natives of Ceylon."—Tennent *Christianity in Ceylon*, p. 265.

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the topics, however, upon which he has dwelt are very interesting, the writer has in his observations followed the order of the subjects treated therein.

Mr. Justice Stark begins with what he considers "the fundamental terms of address," and gives as such six—*tó*, *tamá*, *tamusé*, *tamunnehé*, *tamunnánsé* and *tamunvanhansé*—with the various degrees of respect or disrespect with which each is associated in the native mind. As pronouns of the second person derived from the root ත *ta*, they are certainly distinguishable from a variety of others, which are now used as "terms of address;" but in the enumeration of the latter class Mr. Justice Stark has fallen into a few errors. Of these I many here notice seven omissions, which are pronouns of the third person, applied as terms of address in the second person, viz. උඹහේ *umbahé*, උඹ *umba*, නුඹ *nuba*, ඔබ *oba*, ඔබවහන්සේ *oba-vahansé*, නුඹවහන්සේ *nuba-vahansé* and මුඹවහන්සේ *muba-vahansé* of which the last two only are noticed by Mr. Stark.

It is unnecessary to remark on the above omitted terms, as I have fully treated of them in the *Sidat Sangaráwa;* (pp. 153-168,) but it will be observed, that Mr. Stark is far from being correct when he states that *nuba-vahansé* is the term now employed in lieu of *oba-vahansé.* If he meant, in reference to the Scriptures, of which a new version is being prepared under the auspices of the Bible Society, he was correct; but if otherwise, I need scarcely remark that *oba-vahansé* is the term in universal use amongst the Sinhalese. There is, nevertheless, no objection to the change in the forthcoming version of the Bible, especially in view of the fact, that නුඹවහන්සේ like මුඹවහන්සේ (see *post* extract from *Ratanáwaliya*,) is the term frequently found in books.

The term වහන්සේ *vahansé*, though now no longer used, except as an affix, was nevertheless anciently used by itself to convey what an Englishman would express by "your Excellency," "your Majesty," "your Highness," or "your Lordship."

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Thus in the *Amáwatura* :—

වහන්සේ මම සැබව පිහිටා සිටිමි වදාර ක්‍ෂමාතවාසිකී "Please your Lordship, said he, I will firmly stand by the truth," &c.

The word *vahansé*, like many other terms of address, of which we may mention නුඹ *nuba*,* had not originally a plural form; although in modern usage ලා *lá* is affixed to signify more than one. It was probably this peculiarity which Mr. Justice Stark failed to notice, when he remarked, at pp. 72, 73, that "the term වහන්සේ was applied to the Buddhist priesthood in an associated or collective capacity, as in the passage —පස්වග මහණුන්වහන්සේ in the Játakapota"—where, the reader will observe, five priests are spoken of—an association of five priests to whom Buddha delivered his first sermon.†

Speaking of වහන්සේ as an honorific term by itself, which cannot be called a pronoun, I may here notice a few others of the kind which convey different and various degrees of respect to the person addressed. They are අඩෙ *adé* or අඩෝ *udó*, බොල *bola*, බණ්ඩයි *bandayi*,‡ used as "terms of address" with තෝ *tó*: as අඩෝ මෙහෙ වර 'Come here, fellow;' බොල කාටද මෙහෙම තෝ කතාකලේ 'To whom didst thou thus speak, fellow?' ඇයි බන්ඩයි තට බද්ද ගන්ට මම කීවාදැයි 'Why, fellow, did I tell thee to take the lease?' &c.

These epithets, like the pronoun තෝ, are used both in an affectionate and a contemptuous sense; sometimes by the higher towards the lower classes; and sometimes also by the lower classes towards each other. This promiscuous use, however, militates against the supposition to which Mr. Stark has adverted, that බොල is derived from බොල් 'dross,' 'rubbish.' බොල and බොලන් are derived from බල and බලන් respectively, and mean 'Behold'—whence they are used as vocatives or terms of address. බාතවා, බොලන්, and තඩි which are

* See *Sidat Sangaráwa*, p. clvii.

† See Ceylon Asiatic Society's Journal, vol. I. p. 11. Also Bengal Asiatic Society's Journal, vol. VII., p. 815.

‡ "In Nepaul," says the Rev. Spence Hardy, "the priests are called *bandayá* (whence also the Chinese "bonze,") which in Sanskrit signifies a person entitled to reverence, from the word *bandana*."—Eastern Monachism, p. 11.

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used with තමුසේ or උඹ, are terms of regard or attachment used frequently amongst the lower classes: the first by husbands towards their wives *et vice versâ*, and by ordained priests towards their Sámanéra pupils, as බොලවා පුංචිඋන්නාන්සේ tantamount to "I say, Master Priest:" the second, amongst relations, friends, and equals speaking kindly to each other,* by old people towards their wives *et vice versâ*; and the third to males alone, as by wives to their husbands, or by a superior to his inferior speaking familiarly. This last, as well as අඩා *aḍá*, I am inclined to believe to be of Tamil origin.

There is another word ඔයා, which I shall notice here. It is only used when no other term can be properly applied to a person either without offence or without conveying too much respect. The reader should, however, bear in mind not to confound this work with another of a sound ඔහු "he" or "yonder person," which is used in familiar intercourse amongst the Siŋhalese to signify a person near the person spoken to, or opposite to the person speaking. Like ඔයා, තමා may be used in the third person, when the degree of respect due to the person spoken of, is uncertain or unknown.

I may also here notice another class of words which are terms of address, other than vocatives, and used as honorifics to particular individuals, as; "Mudianse *rálaháми*,"† "Mohandiram *máhatmayá*," "Lekam *máhatmayá*," "Árachchi *rála*," &c.; but I prefer following the order of the learned writer before me, who treating of the honorific වහන්සේ makes the following remarks at p. 69.‡

"වහන්සේ (*vahansé*) is added as an affix to the term for God, and to all the names of God; as also in some relative expressions, as to Father in the Lord's prayer, අපගේ පියානන්වහන්සේ *Apagé piyánan-vahansé*.

"But under the word දෙවියන්වහන්සේ (*Dewiyanvahansé*) Clough points out the difference in its use. Innumerable instances, he says, occur of

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* When a native wishes to convey that he is on good terms with another, he would say:—"Why, we address each other *umba* and *bolan*."

† The Kandyans use "Mudianse-*máhatmayá*," but this is a provincialism.

‡ Here, as elsewhere, the references are to Mr. Justice Stark's Essay on *Forms of Salutation*, &c., in the Society's Journal for 1853.

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the honorific being used in the vocative, in which case it may be addressed not only to one of these beings (the gods of *Swarga*,) but also to a king or any person of rank; but when used in the nominative, it marks at once the difference between a heathen god and the Supreme being."

Mr. Clough it would seem is incorrect in supposing that දෙවියන්වහන්සේ in the nominative alone, conveys the difference between the Supreme being and a heathen god. For, the difference is not the less marked in the oblique cases (except the vocative) owing to the definite form of the expression; from which circumstance alone are Christians enabled to limit its application to the one Jehovah of their faith. This distinction, though trifling, nevertheless furnishes the strongest possible argument in favor of "the continual recurrence of the honorifics in Siŋhalese translations of the Holy Scriptures," which, however, says Mr. Stark "soon offends Europeans, and in some cases, as "Jehovah *vahansé*," the affix almost shocks, coming upon the ear like some discordance in an otherwise heavenly melody." If the repetition of honorifics be, as doubtless it is, offensive to the European ear accustomed to the simplicity of that language, 'whose soul is brevity;' the absence of their recurrence is not the less offensive to the Siŋhalese, whose notions of the beauty of a language are diametrically opposed to those expressed by the bard of Avon.

It is remarkable that the Siŋhalese දෙවි, *devi* like the English word 'God,' is descriptive—the former signifying 'splendour' or 'beauty' or 'purity' of the object to which it is applied, as සූර්ය්‍යදිව්‍යරාජ, "The divine majesty of the Sun," or as in the *Milindappraṣna*, simply සූර්ය්‍යදෙවියා 'the divinity of the Sun;' and the latter the 'goodness' of the being who is designated by that term. Like the English word 'god,' the Siŋhalese දෙවි is also used by us to signify "a prince, a ruler, a magistrate," (Exod. xxii. Psal. xcvii.); or any person exalted too much in estimation, or deified and honored as the chief god. (Phil. iii.) But there is a distinction which some writers have drawn between *devi* as applied to a god of *Swarga*, and the same when used as a term of address to kings, &c. It is

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thus noticed by Mr. Justice Stark in the following note; but without perceiving the difference in their orthography :—

"The same term දෙවියන්වහන්සේ (*Dewiyanwahansé*) is employed by Mr. Alwis in his Siṇhalese version of the *Hitópadésa* as the corresponding phrase for 'Please Your Majesty!'"

The reader will however observe, that both in the extract from the "Thúpawaṇsa" in my "Sidat-Saṇgaráwa," (p. cixxv,) and in my Siṇhalese version of the *Hitópadésa* (pp. 205-6.) දේවයන්වහන්ස and දේවයෙනි* are alone used to express "His Majesty," and not දෙවියන්වහන්සේ and දෙවියනි, which latter are applied to the various deities of *Swarga*.

The words පති *pati*, ඉඳු *iṅdu*, ඉන්ද *indra*, ඉසුරු *isuru*, ඊශවර *ṣ̣wara*, නා *ná*, නායක *náyaka*, each signifying 'chief,' when added to words indicating 'earth' are appellations of Kings. Thus, මිහිපති or මහිපති, බූපති, මිහිඳු, මහින්ද, බුව්සුරු, දෙරනිසුරු or බුශවමීර, බූනා, දියහිමි, මහියායක, &c. With a view to gratify the vanity of kings, who anciently laid claim to universal empire,† they were so designated; and also ලෝපල්, මිහිපල්, මිපා or බුපල්, in the sense of 'nourisher of the world.' In the sense of being 'the chief of men,' a king is called නරදෙව, or නරනිඳු or නිරිඳු, නරවර, නරපති, නරනා, නරවරන, &c. The designations for 'Queen' are not many. They are බිසෝ and මෙහෙසි, and are changed into අගබිසෝ and අගමෙහෙසුන්, when applied to a Queen who has been crowned, or an Empress. The words දේවයන්වහන්ස and දේවයෙනි* are changed into දෙවීන්වහන්ස and දෙවිනි (see "Sidat Saṇgaráwa," p. 205,) when we intend to express "Her Majesty"; the term for 'goddess' being usually දෙවිඳු formed like the ancient term for a 'princess' රජදු or රදු.

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* *Deví*, literally 'Goddess,' but applied to a Queen, as the masculine form *Deva* is especially the title of a King. Professor Wilson's "Hindu Theatre," II., p. 316.

† Thus saith Cyrus King of Persia, the Lord God of heaven hath given *all kingdoms of the earth*.—Ezra i., 2; Judith ii. 1. See also Luke ii. 1. The vain and 'flattering titles' (Job. xxxii. 22,) which the Siṇhalese Kings received in ancient times, expressive of the most eminent qualities, were many and various.—See Burder's *Oriental Customs*, p. 189.

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In the sense in which it is applied to man, දේව is synonymous with උතුම්, from whence we have උතුමාණන්වහන්සේ 'His Excellency the Governor,' "which is the title" says Mr. Stark, "given by the translators on one occasion to the Governor of Judea" at Matt. xxvii. 2. The word මහත්මයා 'He who is great' is derived from *Páli*, මහොත්තම and is equivalent to උත්තම 'chief; "excellent," high,' but Mr. Stark is far from being correct when he supposes that මැති, which is derived from the Sanskrit මන්ත්‍රි, has any relation to උතුම්, or to නමැති in the line of the royal poet :—

"පවර, නමැති, මොරතොට, යති, මහාවන්."

Here නමැති, from නම 'name,' and ඇති 'having,' which means "named" has no connection whatever with මැති. *Meṭi* Siŋhalese, *metes* Greek, *mantra* Sanskrit, *mati* Pali, *mens mentis* Latin, are the words which stand in fraternal connection with each other, having been probably derived, like *manas*, *mens*, and *mind* from the root *man* 'to understand.' From මන්ත්‍ර the Siŋhalese have coined a beautiful compound නීතිදායකමන්ත්‍රණසභාව for 'Legislative Council,' and it is fully expressive of the nature and working of the particular Deliberative Assembly, for which it is a designation.

Mr. Stark proceeds to an investigation of the titles and titular ranks amongst the Siŋhalese, and finds nothing of the nature of the English nobility. If the learned writer here refers to the peculiarity of the relation in which the nobility of England stands to the Commonalty, he is right. For Ceylon has no nobility, which, as in England, sends down members to mingle with the people. Here the distinction of caste and class is the barrier which divides the nobleman from the commoner. Whilst there, in England, the ranks of the nobility are largely recruited from among others, there is here a wide gulf between them which neither wealth, interest, nor education enables the plebeian to cross. There it is regarded as "no disparagement for the daughter of a Duke, nay of a royal Duke, to espouse a distinguished commoner."* Here it

* Macaulay's "History of England," pp. 37, 38.

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is quite the reverse.* Whilst therefore, there are these and other differences which distinguish the English nobility from all hereditary aristocracies in the world, there is also some similarity between the English and Siŋhalese nobility. As no title raised any one to the rank of 'Thane' amongst the German Saxons, except noble birth and the possession of land; so amongst the Siŋhalese, in an early age, none were regarded as of the nobility who were devoid of those qualifications.

A long line of ancestry descended from good blood in the highest caste (the *Goyi-wanṣé*, the cultivators or Vellálas†) alone constituted in Ceylon, the nobility of the land.‡ Between good blood and the privileges of the nobility, there *was* (for my remarks have reference to *the past*, when Ceylon was governed by the Siŋhalese Kings) an important connection. The various officers of the state, including Prime Ministers, Ministers, and Provincial chiefs, were selected from those who could trace back an honorable descent through many generations. They formed the first or chief class of society: and those who bore titles, as well as those who stood with them on an equal footing in point of birth, constituted the nobility of the land. To this body, which increased only with their families, no accessions were ever made, except as we find, from two classes of persons. One, the natural children of Kings and Princes, who were alone entitled to the appellation of *Bandára*; and the other, those whom the Monarch had honoured by rasing to, what Mr. Stark calls, the "eminent

* "The marriage of a man with a woman of a superior caste to himself is prohibited, and even carnal connection between the sexes of different castes is penal, especially the connection of a higher caste woman with a low-caste man."—Sawyer's *Kandyan Law*, p. 26.

† "The *Goyi wanṣa*, *Goyi-gama*, *Raté*, or *Handuruwó*, compriseth the *Bandára waliya*; families of the highest rank, who claim descent from Princes.' —*Armour's Kandian Law*, p. 3.

‡ "It is the more usual course for the cultivators of the soil to be regarded as forming the noblest class of the people, next to that who held rank as hereditary princes; they are the eupatrids; they form the timocracy; and it is from them the rulers of the state are chosen; as delegates of the King when the Government is monarchical, as temporary chiefs when it is an aristocracy."—Spence Hardy *Buddhism*, p. 75.

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place" of *Siṭu*. Various instances, as those of *Ghósaka*, *Pawárika*, *Mahadana*, *Sumana*, &c., may be adduced from native records, of persons created *Siṭu*, simply owing to their great wealth.

This may however, appear strange, when we reflect on the hindrance of caste to the social system in the East. One would be led also to believe, that something more than mere wealth was necessary to give claim to the privileges of this distinguished title. Not so. There is perhaps not a single instance on record by which we could find that there was any other recommendation for this gift of Royalty, except the great wealth of the recipient. Of couse, it is not to be supposed that this high distinction was conferred on the *Chaṇḍála*,* the lowest of the low in point of caste—men, who by reason of their mean birth, were regarded as fit for nothing but the office of public executioners ;† but such of my readers as are read in Bhuddhistical scriptures, know that Mahadugiyá "the great beggar," whose destitute circumstances had been like those of Lazarus in the parable of Christ, was raised to the nobility, on his acquiring a great treasure by his meritorious conduct towards Bhuddhism.

There is also an instance in the *Ratana-waliya*, of a poor *Siṭu's* servant acquiring great wealth by reason of his charities, and of his thereupon being created a *Siṭu* or nobleman. The legend, after describing the nature of his charities and their result, proceeds thus :—

එරත්රන්ගෙන්නවා සෙඩ්ඩුඑවෙහි රැස්කලහ. වඩුවෙත් අසූරියනක් විතර ගොඩවිය, රජ්ජුරුවෝ නුවරවැස්සන් රැස්කරවාලා මේනුවර මෙතෙක්වස්තුව ඇත්තේ කාගෙදැයි විචාලේය. සෙස්සවුන්ට මෙතෙ ක් වස්තු ඇතිවන්නේ රජවසිටි මුඹවහන්සේට ඇත්තම්වේදැයිකීවිය. රජ්ජුරුවෝ එඅසා මෙතෙක් වස්තුඇති තැනැත්තවුන්ට සිටුතනතුරු තිසිවේදැයි බොහොසම්පත්දී සිටුසේසත්නංවා සිටුතනතුරුදී බහුධන සිටාණෝයයි නමුත්දුන්හ.

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* "The *Seḍol* or *Chanḍála* is represented as one who is born in the open air; his parents not being possessed of the smallest hut, where, as he lies among the pots when his mother goes to cut firewood, he is suckled by the bitch along with her own pups."—Spence Hardy on *Buddhism*, p.86.

† See Wilson's "Hindu Theatre," vol. i. p. 159.

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That is to say :—

" They heaped up the gold in the compound ; and the heap was about eighty cubits high. The King summoned the citizens and inquired of them, if there was any other in the city who owned such an immense wealth. They replied, that insignificant men could not possess so much, when His Majesty himself had it not. When the King had heard this reply, he said that the owner of such wealth was indeed a fit object for the nobility (*Siṭu*) ;* conferred on him further riches ; hoisted up the white canopy of state ; created him a *Siṭu ;* and named him *Bahudhana Siṭáno*, or 'The great opulent Siṭu.' "

If therefore, from the fact of a *Siṭu's* being a nobleman by creation, and of his being thereby entitled to the privileges† of the Siṇhalese nobility, a comparison may be instituted between an English Baronet and a Siṇhalese *Siṭu*, I trust my observations in the " Sidat Saṇgaráwa," to which Mr. Stark refers, were not misconceived.

It appears from the " Maháwaṇsa" that the consort of Aṣóka, the great Monarch of India, was the daughter of a *Siṭu*. The passage to which I refer is the following : " While Prince Aṣóka was ruling over the Awanti country by the appointment of his own father, on a journey to Ujjeni he arrived at Chétiya ; and while tarrying there having gained the affections of the lovely princess Déwi, the daughter of a Seṭṭhi, he lived with her."—*Mahawaṇsa*, p. 76.

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* සෙට්ටි *Seṭṭi* or හෙට්ටි *Heṭṭi* is still vulgarly used to signify 'a rich man;' as for instance, speaking of a man hoarding up riches මේතමේ හෙට්ටිරාල; බොල මූ හෙට්ටිකාවගේවද. It appears from Hindú books also, that a *Siṭu*, who is called in Sanskrit *Sréshthi*, and whom Professor Wilson designates "Chief of the Merchants"—perhaps from the circumstance of his opulence—was a nobleman who took part in the affairs of the State. In the Hindú play denominated *The Toy Cart*, in Wilson's Hindú Theatre, vol. i., p. 145, a *Sréshthi* is introduced as the Judge of " Recorder " of a Court.

† This is a proper name, and not a designation implying 'Queen,' as in the following passage in the *Ratanáwaliya*, the Hindú play :—

" Madam, You justly possess the title of *devi*."

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Although the children by this lady were admitted into the privileges to which princes were usually entitled; yet it would seem, that upon Aṣóka's ascending his father's throne of Páṭaliputtra, *Déwi* was not crowned 'Queen consort.' From this circumstance* we gather, that a *Siṭu* was equal in rank to a Prime Minister, or even Sub-King, but inferior to the Royal family.

Whilst on the subject of Monarchical councillors, of whom a *Siṭu* was undoubtedly one, we may here glance at the state of that *Council*, the want of information regarding which Mr. Stark remarks. But in doing so, it may perhaps not be out of place to notice a few of the titles of address of those who composed the Executive Government of Lańká.

Although the Government of Ceylon was in the abstract a Despotic Monarchy, where the will of the Sovereign passed into a law; yet it is remarkable that in ancient times, when pious and talented princes ruled over the destinies of this Island, nothing of any importance was done or decreed without the advice of the අමාත්‍යමණ්ඩලේ *Amátyamaṇḍalé* or the Council of State. Indeed the Institutes of Manu, which formed the basis of the polity of all Indian Governments, including that of Ceylon, required that the Sovereign should be assisted by his Ministers.† Thus, we read in history, that whilst different parts of the Island which constituted subordinate principalities, were each placed under a *Yuva-rájá* or 'Sub-

* "The mother of the Thero Mahinda, (son of Asoka) sending her children to the King's court, continued to reside herself at the city of Chétiyagiri." *Introduction to Mahávaṇsa*, p. xlvii.

† "And all that must be done by him (the King) for the protection of his people *with the assistance of good ministers*, I will declare to you as the law directs in due order."—*Manu*, chap. vii. § 36. "Let them perpetually consult with those Ministers on peace and war, on his force, on his revenues, on the protection of his people, &c. Having ascertained the several opinions of his councillors, first *apart* and then *collectively*, let him do what is most beneficial for him in public affairs."—*Ib.* §§ 56, 57.)

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King,' the chief kingdom was presided over* by the *Maha-rája* or Monarch himself, who had no less than seven Councillors, or Ministers attached to his Court. In later times, however, this number was reduced to four; and yet these four, with the King at their head, formed the Cabal, Cabinet, or the Privy Council of Ceylon. Collectively, their duty was to assist the King in the executive and legislative functions of Government, which were vested in the King; but individually, they had separate duties assigned to them. The "Premier" was the *Puróhita* Minister; and when a Bráhmin, he was the domestic Chaplain of Bráhmin Kings. He was to attend on the Kings; that is, he was attached to the King's household. One had the care of the Metropolis, "Home affairs," in respect of which he may perhaps be styled, "the Secretary for the Home Department," whilst another was "the Minister for Foreign affairs," and the dispenser of Justice; the latter office being analagous to that of the Lord Chancellor of England. The fourth was "the Minister of War."

The Siṇhalese Ministers of State, latterly, received the appellation of "*Adigars*," *i. e. Adikáran*, from අධි† *adhi*, 'over,' 'above,' 'upon,' implying superiority in place; and *karaṇa* the instrument in the sense of executive;" but little mention of them is made in ancient books, which only refer to මැති *meṭi* or මන්ත්‍රී *mantri* "Councillors."

It is foreign to my purpose here, to enter into a consideration of the different duties attached to them, the perquisites to which they were entitled, and the privileges which they enjoy. In pursuing my investigation of the names of native

* In the *Raja Tarangini* these seven officers are stated to be 'The Justiciary or Chancellor,' 'Treasurer,' 'Master of the Military Stores,' 'Commander in Chief,' and 'Messenger or Ambassador,' 'Royal Chaplain,' and 'the Chief Astrologer.'—See "Asiatic Researches," xv. p. 21. Also in *Manu*, § 54. "The King must appoint seven or eight Ministers."

† From this inseparable preposition *adhi*, we obtain *adhipati*, a term which may be properly used to signify "Chairman," "President," and even "Judge" or "Governor."

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titles, and their significations, I shall pass on to the "Officers of the Palace,"* or the King's household.

It consisted of a great many office-bearers. Dr. Davy, (who was indebted for the interesting account which he has published of these officers to Millęwé, the Disáwa of Wellassa,) gives 36. A *Gajanáyaka Nilamé* seems to have been the principal of them. As the term implies, he was 'the Chief over the Elephants;' and probably his superiority over the rest arose from the great estimation in which elephants were anciently held, as one of the චතුරාග්නිසේනා or 'the four constituent armies of war.' His office was analogous to that of "The Master of the Horse" in England; and under him was placed a *Lékam* or 'Recorder,' who obtained the designation of *Kúruwé Lékam*, the word *Kúruwé* signifying his connection with the 'Elephant department.'

The *Maha Aramudal Wannaku Nilamé* was the 'Lord of the Treasury,' an office of the highest rank, which corresponded with that of *Báṇḍágárika*, and to which anciently even princes were appointed, as for instance, Prince Ghotabhaya.† The *Maha Gabaḍá Nilamé*, and the *Uḍa Gabaḍá Nilamé*, were also 'Treasurers,' each with distinct duties to perform. The officer answering to the "Lord Chamberlain" of the English Court, may perhaps be identified with the *Haluwaḍana Nilamé* of the Siŋhalese. He brought to the King his apparel, his sword, crown, &c. He dressed and undressed the King, and waited on him for the purpose of adjusting his dress. The *Batwaḍana Nilamé*, the officer who had the managemgnt of the royal table, and the *Diyawaḍana Nilamé*, who superintended the royal bath, were officers who approach very near to the "Lord Steward" of England. Under these were many subordinate officers, of whom *Sattambis* were the people who poured water on the King at his bath, and *Pihanarálas* were royal cooks. It is needless to enter into a minute detail of the names of the other officers.

* Davy's Ceylon, p. 143. † See *Attanagaluwaŋsa*, and also *Mahâwaŋsa*.

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They are chiefly descriptive of their several occupations. The reader may obtain a great deal of information on the subject by a reference to Davy's Account of Ceylon, where the names are given at length, with an account of the various duties which the officers performed.

The Ceylon Council of State, and our ancient Court were not unlike those of the Hindús. From the mention of various terms which occur in books, we gather that the members of whom the Siṇhalese Court consisted, were the same that are referred to in the Hindú Plays;* such as, *Mantri* or "Councillor," *Dúta*† or "Messengers," *Wadhakayá* "Death's Minister,"—of which there were two kinds, wild animals, such as elephants and horses, and *Wadakaru* or "executioners,"† *Chara purusa* or "spy," *Nándyak kára* or "disguised emissary or informer."‡

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* The *Court* looks like a Sea;—its *Councillors*
Are deep engulphed in thought; its tossing waves
Are wrangling *Advocates*; its brood of monsters
Are those wild animals—*death's Ministers*—
Attornies skim like wily snakes the surface—
Spies are the shell-fish cowering 'midst its weeds,
And vile *Informers*, like the hovering curlew
Hang fluttering o'er then pounce upon their prey!
Pr. Wilson's "Hindu Plays," i. *p.* 149.

† This word Pr. Wilson interprets to mean "attornies," or "the enveys or representatives of the parties." *Loc. cit* i. p. 149. *Note.*

‡ Tradition says, that in ancient times in Ceylon, a criminal underwent the same ordeal that is described in the following passage in the Buddhistical annals:—"In aforetime, the Wajjian rulers, on a person, being brought and presented to them, thus charged: 'this is a malefactor dispose of him accordingly.' They surrender him to the *Winichchhaya mahámachiha* or 'chief Judicial Officer.' Having examined him, if they conceive 'this man is not a culprit,' they release him. If they decide 'this is a malefactor,' without awarding any penalty, they transfer him to the *Wohárika*, 'learned in the laws. They also having investigated the matter, discharge him, if he be innocent; but if he be guilty, there are certain officers called *Suttadhára*, 'maintainers of the *Suttan*,' to whom they transfer him. They also inquire into the matter and discharge him, if he be innocent; but if guilty they transfer him to the *Atthakulaka*, 'a Judicial institution composed of Judges from all the eight tribes.' They also having observed the same procedure transfer him to the *Sénápati* [translated by Turnour] 'the chief Minister'; he again to the *Uparája*, 'Sub-King'; the *Uparája* to the *Rája*. The King, inquiring into the matter, if he be innocent, releases him; but if he be guilty, he causes the *Paweni-potthakan*; 'book of precedents or usages,' to be propounded. There it is written,—to him, by whom such a crime is committed, such a punishment is awarded. The *Rája* having measured the culprit's offence by that standard, pronounces a suitable sentence."—*Turnour's Buddhistical Annals of Ceylon.*

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Referring to the difference generally between English and Siŋhalese officers of Government, Mr. Stark says :—

"The Government Agent is sometimes styled *Disáva*. But there can be no analogy among officers in systems of Government so very different as respects the distribution of official power and duty, as the English and Siŋhalese; and it only tends to perpetuate misapprehension to use the names indiscriminately."

In the case of *Disáva* being applied to the "Government Agent," no misapprehension results; and in my opinion, a better designation could hardly be conceived, as one with which the Siŋhalese are altogether familiar, and one too, with which so much respect is associated in the native mind. A *Disáva*, or more properly *Disápati*, under the Siŋhalese Government, was a "provincial chieftain," who had principally the management of a province: similarly, the Government Agent of the Ceylon Government at the present day is the chief revenue officer of a Province. The analogy between the two officers is apparent, and the propriety of the native designation, is therefore unquestionable. There are also several other European titles to which native terms are peculiarly applicable; as for instance ලේකම් for "Clerk;" සෙනෙවිරද for "Lieutenant Governor;" බාංඩාගාරික for "Treasurer;" සේනාපති for "General" or "Chief of the Forces;" වල්ලභ කුමාරයානෝ "Prince Consort;" තානාපති "Ambassador;" &c. Not so, however, as respects certain other offices which are ill-expressed by any titles of address known to the Siŋhalese. Of this class are "Auditor General," "Post Master," "Surveyor General," "Secretary," &c. For the last, the Siŋhalese in their graver compositions, unmixed with English phraseology, adopt the title of ලිපිකාරතැන්: but it is apprehended, that it is not fully expressive of the English term. It is therefore, I believe, that in our Courts, the English word is adopted: in regard to which Mr. Stark says:

"The Secretary of the District Court subscribes himself *Secretary Swamtha*, which is derived from *Swámi* or *Swámiya*, a lord or master. This appears singularly inappropriate, his proper appellation as Clerk of Court is certainly *Unnánse*."

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Here is some misapprehension. The title of the Secretary in question is simply *Sekratáris*, (the *s* being an affix added in composition for the sake of euphony, as *n* in *Dewiyan*) ; and he does not conclude with any honorific, but with simply වමහ *wamha*, which means "we are," for "I am." Thus it will be perceived, that the words used by the Secretary, viz. *Sekratáris wamha*, were mistaken by Mr. Stark for *Secratary swámiya*. If however, the case be as stated by the learned writer, there is no doubt but that the appellation of "lord" or "master" is "singularly inappropriate" to a Secretary, as සාමිදු රුවෝ is unquestionably so to the Government Agent—who nevertheless uses this high honorific in all his correspondence with his native headmen.* A Mudaliyár of the Gate, who was addressed in this style, returned the *óla* epistle to the Government Agent, and addressed him as follows on the 10th March 1839 : "I did not receive it (the letter) because it was written in a manner disgraceful to me : and I do not make the least doubt that if you are acquainted with Siṇhalese, you would, on looking over the style or phraseology of that *óla*, be convinced of the impropriety of the same." See translation of the document in the Colombo Kachchéri.

Whilst on the subject of *swámi*, I may perhaps here notice another inaccuracy into which Mr. Stark has fallen, by rendering *Maha-himiyá*, 'the great proprietor'; and in supposing that the priest Sṛriyut was so called from his having been 'a great and distinguished *author* of his time.'† *Himiyá* here means *swámiyá* 'lord,' and not 'proprietor:' and proprietorship and authorship are not convertible terms : nor have they such a relation to each other as to render one term applicable to the other in a secondary sense.

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* The practice is reported to have existed for "twenty-five years" prior to the date of the letter referred to in the text. See L. De Livera, Attapattu Mudaliyár's report, March 14, 1839.

† Probably Mr. Stark fell into this error by reading Armour's "Kandyan Law," where *himi* (as in *lat himi*, 'domination by right of purchase') is used in a secondary sense to mean 'right of acquest,' 'proprietorship.'

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Hámu-duruvó (see "Sidat-Saŋgaráwa," p. 160,) is derived from *himi*, which comes from *swámi*. It does not sustain, as stated by Mr. Stark the "combined sense of master and instructor;" for it is never used towards a lay instructor, although it is peculiarly the appellation of the last of the triad of Buddhism, the priesthood. Yet the priest does not obtain it in his capacity of "master" or "instructor:" it is given to him owing to his peculiar sanctity,* as 'one of the three gems of adoration and worship.' Following the practice of the Buddhists in this respect, the Siŋhalese Roman Catholics apply this term to their priests.

The designation of a "teacher" is ගුරු, from ගෞරව 'honour,' 'respect.' 'veneration'; and in that sense it is also applied to a parent,† It is used with the affix මහත්සේ and නාන්සේ, when greater honor is intended; yet it is a curious fact, that the same word ගුරු when used with the affix න්නාසේ, as ගුරුන් නාසේ conveys the idea of an instructor of *mean* or *low extraction.*

Before entering upon an investigation of the terms applied to the Buddhist priesthood, of which Mr. Stark has treated in different parts of his essay already referred to, I shall here remark that *Mudali*, from whence we derive *Mudiyansé* or "*Mudaliyár*," is of Tamil origin, and means 'chief' or 'principal.' Amongst the Kandyans *Mudiyansé* is not unfrequent as an agnomen; and they, like the Tamils of India, assume it without any authority from the Crown. The maritime natives, however, obtain it formally by an act or warrant from the Governor. In this respect the British Government follows the example of their predecessors, the Dutch and the Portuguese.

* "Of those who have no fixed habitation. the priests, the *Passé* Buddhas, and the supreme Buddhas, are the chief."—*Spence Hardy's Translations from Buddhist Scriptures.*"

† "The father who performs the ceremonies on conception and the like, according to law, and who nourishes the child with his first rice, has the epithet of *guru* or 'venerable,' "—*Institutes of Manu* II, § 142.

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The Mudaliyárs or Chiefs are of two classes, වාසල or 'of the Royal Palace or Household,' (usually called "the Gate," after the Portuguese who gave it the appellation of *Porte*, from a misapprehension of the Siṇhalese word වාසල, which also means 'door' or 'gate') and අතපත්තු or 'Provincial Chiefs.' There were originally two other classes, which are known as කුරුවේ 'the Royal Equerry,' and බද්දාසන or 'the Ecclesiastical chiefs.' To these may be added a fifth class—කෝරළේ or 'the District Chiefs,'* Under each were placed different subordinate headmen, called *Muhandirama*, *Vidána-Árachchi*, *Árachchi*, *Kangáni* and *Vidáne.* The last is derived from the word විධාන 'commanding,' or 'ordering' and means, as Clough defines it, "the person who conveys the orders of Government to the people." Over all the headmen is placed a *Maha Mudaliyár*, the *Maha Nilame* of the Kandyans, or 'the greatest of the chief.' If any person, whether titled or untitled, can trace his descent to a Mudaliyar, he is said to be of the *Mudali péruwa*, the correct interpretation of which is, 'of the class of Chiefs,' rather than "the titled class," as rendered by Mr. Armour.

Besides the ranks and titles which the natives obtain from the Crown, there is also a class to which particular individuals are entitled by reason of birth or position. Of these we may mention *Gamarála*,† equal to a "County squire" in England, but not held in the same estimation in Ceylon.‡ He is however of the highest caste (*Vellála*,) and one who in point of wealth has a competency for his subsistence. *Appuhámi* "is the rank of a 'gentleman,' of the highest class of the

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* For a tolerably correct description of the duties of the chiefs of the Maritime Province, see *Colombo Journal*, 1832, p. 262.

† This title is rendered ගම්මුදලියා *Gammudaliyá*, 'the chief of the village' in a Siṇhalese version of the tale of the King Adahasmuka.

‡ Mention is made of the election of *Gamarálas* under the provisions of the Paddy Lands Irrigation Ordinance;' see Proclamation in the Government Gazette of the 24th July 1858.

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Vellálas" who anciently enjoyed certain privileges which are now denied to them; and *Appu* that of the plebeian, equal in its application to "Mister." As honorary terms of address by which persons of different castes are distinguished, I may mention *Handuruwá*, confined to "Vellálas"; *Naidè* to "Smiths"; *Hénayâ* to "Washermen"; *Ridi* to "Washer-women"; *Méstri* to "Barbers"; *Mahabaddu* to "Cháliyas"; *Batgamayá* to "Paduwas"; *Nẹkati* to "Tomtom-beaters"; *Wahumpurayá* to "Jaggerers," &c. &c. Whilst the above are mere honorary designations of different castes, there are others which are used as terms of affection and endearment to persons of low-castes; as for instance, *Héna Mámâ*, "Uncle Héna" to a Washerman; *Ridi Nẹndá*, "Aunt Ridi" to a Washerwoman, *Vaḍurála*, "Master Carpenter" to a Carpenter; &c. &c.

There are also certain terms of respectful designation by which persons of different trades are distinguished, as for instance *Maṇḍáḍirála*, among Karáwas, 'for the man in charge of a part of a fishing net, called *manda*'; *Hannẹḍirála* 'the owner of the fishing boat,' or 'the chief of the fishing band.' Formerly Moormen composed the class of people who were generally employed as Masters of trading vessels; and they received, in the sence of *Tindal*, the appellation of *Marak-kalayó*, a term now applied to others who perform the same office, and also to the Head Moorman.

Whilst the above are the ranks and titles of address of maritime native Siŋhalese, those of Kandyans appear to be different, with some exceptions which are *Kórála*, *Mohoṭṭála*, *Árachchila*, *Lékama*, and *Vidáne*; and, says Mr. Justice Stark in reference to them:

"The above, namely, the Adigar, Disáva, and Raṭémahatmayá, were the principal officers under the Siŋhalese Government; and in the convention of 1815 entered into after the conquest of Kandy by the English, for the cessation of hostilities and the settlement of this country by a formal declaration of the power and principles of the new Government, they are mentioned or alluded to as the principal chiefs of the Kandyan Provinces, and the *Mohoṭṭála*, *Kórála*, *Vidána* and others, the subordinate headmen from the Provinces."

To the above may be added *Basnáyaka* and the *Diva Nilame* (the word *Nilame*,* 'Officer' alone being sometimes used as a term of address to a titled person), which are amongst the titles of chiefs; and *Atukórála*, *Árachchila*, *Vidána*, amongst those of petty headmen. I have already alluded to *Bandá*, and the original acceptation of the term. I need only here refer to it, to shew that it is now assumed by every Kandyan of the Vellála caste, in the same manner that the appellation of *Appuhámi* is affixed to the name of every maritime Vellála (and freqnently of Karáwas) without distinction, and contrary to the original usage, by which only a gentleman was entitled to it.

I cannot close my remarks on this part of the subject, without attracting attention to a mistake into which Mr. Stark has fallen, in common with a number of European writers, who consider the maritime natives to be distinct from the Kandyans, whom alone they regard as "*the Sinhalese*, strictly so called." Mr. Stark remarks :—

> "The Kandyan or hill country is distinguished from the lower or maritime districts, by the same name, *Sinhalé*; and the town of Kandy is *Maha nuwara* the *Megalo-polis* or 'great city,' the Metropolis. These names are easily accounted for, but they are recorded as given."

Now, the Kandyans, like all highlanders, are certainly distinguishable from the Maritime Natives. From the salubrious air which they inhale amidst their upland hills, the Kandyans are braver and more hardy than the people of other provinces. The independence which they enjoyed until comparatively a short time ago, has tended also to elevate their general bearing over that of the people of the Southern and Western Provinces. They have preserved too, their religion and language without suffering much from the various colonial influences to which the low-landers have been subjected for three and a half centuries. The latter, by the change of their religion, occupations,

* This, when affixed to *Maha*, is used to signify an Adigar, or the Maha Mudaliyár.

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and habits, may have slightly lost the distinct peculiarities which originally characterized the entire Siṇhalese nation ; yet the differences in these respects no more render necessary a distinction in their nationality, than do the accidents of birth-place, or other circumstances, which enable us to distinguish an Englishman of Northumberland from another of Middlesex or Yorkshire, or a native of Galle from one born in Colombo. The difference, however, which has been drawn by Mr. Justice Stark, has arisen from a misapprehension of a single circumstance. It is this. When a part of Ceylon fell into the hands of the Portuguese, and the Siṇhalese Court was removed from Kóṭṭé to Kandy, that part of the *Siṇhala-dwipa* which was retained by the Siṇhalese, was called *Siṇhalé* (the appellation by which the Kandyan Provinces are known to this day,) as contradistinguished from the territory of the Portuguese. The distinction therefore, was one of *territory*, not of *nationality*. It was employed to determine the jurisdiction of the Siṇhalese Government from the possessions of the Portuguese. As the Kandyan Provinces alone (which were retained by the Siṇhalese) became thus universally known as *Siṇhalé*, a misapprehension of its cause and origin led Europeans to distinguish the *Maritime Siṇhalese* from their *Kandyan* neighbours, both of whom are descended from the same stock, speak the same language, are subject to the same habits, and are possessed of nearly the same feelings. Hence the distinction to which reference is made.

There is however one distinction, in respect to their names, which I may notice here. The low country Siṇhalese have more names than their Kandyan countrymen. Whilst the *gé-nama* or 'family name,' the *bat-kavana-nama*, 'the household term of endearment'—usually given on the occasion of giving food to a child for the first time, which is celebrated by a festival,—and the *patabẹndi-nama*, or 'the name which is assumed on obtaining office,' are the same in both countries : yet the names which distinguish the *Kandyan* from the *Maritime*

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Siṇhalese are the "Christian names" and "Surnames" * of the latter. The "Surnames" are those which they have borrowed from the Portuguese, such as D'Saram, D'Alwis, Silva, Perera, Dias, D'Saw, &c. &c., and the example having been first set by the highest families of the land, the lower classes have considered it a privilege to be allowed to assume the like names. As to the "Christian names," they are generally assumed by all classes, both Buddhists and Christians, upon the ceremony of baptism, of which Sir James Emerson Tennent thus writes, in his work on "Christianity in Ceylon."

"It had been declared *honourable* by the Portuguese to undergo such a ceremony; it had been rendered *profitable* by the Dutch; and after 300 years' familiarity with the process, the natives were unable to divest themselves of the belief that submission to the ceremony was enjoined by orders from the Civil Government,"—p. 88.

So they believed at first. But baptism soon became an indispensable rite in regard to their civil rights. One of the consequences of this ceremony was, that the name of the party baptized was registered in the Thombo: and the registration was of the most paramount importance to the litigious Siṇhalese. In all matters regarding their inheritance, in all their contentions on the ground of illegitimacy, and on various other questions that frequently come before the Courts, registration, and registration alone, is the best evidence of what they seek to establish, or disprove. From the fearful amount of perjury that is to be found in the Courts, they fear that without this documentary proof they will fail to establish their rights: and it is therefore (to use the language of Sir Emerson Tennent in the subsequent part of the passage that I have just above quoted) that, "when a parent upbraids his child in anger, he sometimes threatens to disinherit him, by saying, he will 'blot out his baptism from the thombo.'" So scrupulous however, are they in respect of this registration, that actions have

* In accordance with this practice amongst the Siṇhalese, the Tamils of Vaḍḍukkóddai have assumed, upon baptism, such names as Carpenter Rowe, Morgan, Covington, &c., &c.

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often been brought to compel the registration of particular patronymics, and to cancel others to which parties were not entitled.

Thus it will be perceived, that the Siŋhalese resort to baptism, neither as a religious duty, nor as a ceremony which conferred, as supposed by Sir Emerson Tennent, "some civil distinction;" but simply as an operation which alone secured the registration, which they prized so very high.

This leads me to notice a misapprehension under which Sir Emerson labours, when he thinks that "to the present day the Siŋhalese term for the ceremony [*kula-waddanawá*] bears the literal interpretation of '*admission to rank.*'" Not so. Owing to a notion amongst the maritime Siŋhalese, that if they adopt in their families a stranger or an illegitimate child, after baptizing him "in their own name"—which follows a registration of the baptism in the Thombo—he would, in the event of their death be entitled to inherit the property of "the adoptive parent's estate." * *Kula-waddanawá* was originally used amongst the Siŋhalese; but its application at present to the baptism of legitimate children, as well as natural offspring, and children by adoption, is to be regarded merely as a species of *catachresis* in the language. *Kula-waddanawá*, again, is not "admission into *rank*;" but "admission into *family*"—a recognition of one's *civil rights*. Thus, the *Kula dévatává* in the Hindu plays † is the *household* deity, the "object of *hereditary* and *family* worship," the *domestic* god of the Bráhmins. In the *Selalihinisandésa*, the poet directs his winged messenger "cheerfully to remember his *household* god."

"සතොසිනිත්තමකුලදෙවියසිහිකොට"

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* This is a notion still entertained by many native Siŋhalese, although the Dutch law, to which they are now subject, had completely upset the right which the child of adoption acquired by the Siŋhalese law.—See *Sawyer's Notes on Kandyan Law, p.* 25.

† Vol. I. p. 21.

I presume the notion regarding the "distinction," which it is thought baptism conferred on the native, is without foundation; and Sir Emerson is equally misinformed, when he states, that *Tó Jintiguuá*, which he interprets to mean "unbaptized wretch" is applied by *Buddhist* to Buddhist as a "term of reproach." *Jintigu* is a Portuguese word used in the sense of "gentile," or "pagan" and is only applied by *Christians* to their Buddhist brethren by way of *reproach*; as many of the slander cases before the District Court of Colombo, amply testify. It has no connection whatever with baptism; and I may safely affirm, that no native uses it to a co-religionist, much less by a Buddhist to one of the same creed.

I shall now proceed to an investigation of *religious* titles or "terms of address" to *Buddhist priests*. On this subject, the following passage occurs in the essay already so frequently referred to:—

"A generic name for a Buddhist priest is said by Bridgnell to be ගණින්නාන්සේ (*Ganinnánsé*) probably from some root signifying learning or wisdom, whence we have *Ganésa* the Hindu God of Wisdom, *gana* a poetical measure, and *ganitaya* the science of Arithmetic. But Clough derives the word differently, and thinks it is an inferior term applicable to the lowest order of priests."

In my opinion, both Bridgnell and Clough have failed to give the correct application of the word *Ganinnánsé*. In the first place, it is not a generic term for a 'Buddhist priest'; although people of different creeds (other than Buddhists) vulgarly employ it, as well as the simple *Unnánsé* to signify 'priest'. Sometimes also *gana* is used without the *nánsé* in a contemptuous sense, as අරහෙ ගණයාගෙනෑ බ! tantamount to 'look at that *ganayá*!' In the next place, it is not "an inferior term applicable to the lowest order of priests." It is properly the designation of the principal or the chief of a semi-association; "the *nánsé* lord of a *gana* class;" * or, in the language

* A *Gana*, according to the ceremonial doctrines of Buddhism, is a class or semi-association of not less than two nor more than four priests; and *Sangha* is an association of any number of priests above four. Thus, the following passage in the *Miliadappraṣna*, referring to the six Arahatwas or Tirthakas, ඒ සදෙනාවහන්සේ සංඝාධිපතීහු ගණාධිපතීහු may be interpreted: "Their Lordships, the six aforenamed, are hierarchs over [saŋga] *associations*, and [*gaṇa*] *semi-associations*."

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of Miljndu in the *Milindapprasna;* the "*head of a sect* having fraternities of his own." Hence it is clear, that the word is not derived "from some root signifying learning or wisdom." Nor is it from any such imaginary source that we get *Ganésa* the Hindu God of wisdom, *ganaya* a poetical measure, and *ganitaya* the science of Arithmetic. *Ganésa* and *gana* like *ganinnánsé*, are both derived from the same root *gana* or 'class': the *ya* in *ganaya* being merely an affix for the sake of euphony and *ésa* in *Ganésa* being an abbreviation of the word *Iswara*, 'chief,' whence as 'the chief of a class' it is applied to the Hindú God of wisdom. But *ganitaya* is derived from *gana* 'to count.'

The principal terms, however, for a Buddhist Priest are four; 1, *Sráwaka* from *sru* 'to hear.' 2. *Sramana* (Sans.), *Samana* (Páli), *Mahana* (Sinhalese), signifying the performance of ascetism; whence it is probable that the epithet *Samanean*, as applied in the religious system of Tartary, is derived. Sir Emerson Tennent, in his work on "Christianity," has the following note in reference to the use made of this term by other nations.

"It is remarkable that this name [*Sámanéro*] which to the present day is preserved as the designation of the Buddhist priesthood in Siam and Ceylon, should be the same by which the *Samaneans* or Buddhists of Bahar are described by Megasthenes, who, B. C. 300, was an ambassador from Seleucus to their king; and whose lost work on the state of India at that period is quoted by Strabo and Pliny. The same designation for the priesthood, *Samana*, is applied equally by Clemens Alexandrinus in the second century, and by Porphyry in the fourth."—p. 216.

Referring to the same use of this word, the Rev. Spence Hardy extracts the following passage from "Relation des Royaumes Bouddhiques," p. 60, quoted from *San tsang fà sou*, liv. xxii. p. 9.

"When the four rivers fall into the sea they no longer retain the name of river: when men of the four castes become Samaneans, they receive the common name of sons of Sákya (synonymous with bhikchou.)—*Eastern Monachism*, p. 11.

The word *Samana* becomes *Hamana* by the well-known transformation of *s* and *h*; and the last, by a process of meta-

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thesis, assumes the form of *Mahaṇa.** See "Sidat-Saṇgaráwa," p. 7. From *Mahaṇa* we obtain the word *Mahaṇa-unnánsé* or *Mahaṇ-unnánsé*, which means "reverend ascetic"; but not "the great one," as incorrectly interpreted by Mr. Hardy, probably by confounding it with *Mahá-unnánsé* which is *not* the "collective name" of the priests, but a designation by which the chief of a Monastery is distinguished from amongst several who happen to form an association, or to be the subject of conversation or writing.

From the Páli word *Samaṇa* and *éra* which in composition becomes *néra*, we obtain *Sámanéra*;† and it means a "young ascetic," "a novice" or "pupil of a priest." The words which bear the same meaning, and are applied to *Sámanéro* or priests who have not received the Upasampadá ordination, are *Yatiput* and *Heraṇa*. Many honorifics, which are used towards Upasampadá priests are inapplicable to *Sámanéro*. Thus we find in the Siṇhalese version of the *Milindappraṣna*, and in one and the same sentence, that a *Sámaṇéra* is spoken of as "*Sámanérayan wahandǽ*" සාමණේරයන්වහන්දෑ;‡ and a *Thera* as "*Bikshun wahansé*" භික්ෂූන්වහන්සේ: and where a priest applied "*Saminda*" to his own teacher, a venerable *Samaṇéro* of upwards of 60 years of age, the propriety of the designation was questioned in the following lines published in the *Yatalaba-Saṇgara*, p. 37.

ගෙරණදමුරුවන්කොයලෙස්සමින්දුලනාදෝ
වරණකරකියන්පුත්ලෝසිරිත්බස්නොමැත්දෝ

3. *Sthavira* (Sans.), *Thèra* (Pali), or *Tera* (Siṇhalese,) means "Elder." It is synonymous with *yati*; and both

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* The proper designations of a priest are *Pabbaja*, one separated from secular life, and *Bhikku*, a mendicant. The common Siṇhalese term is *Mahana*, which is represented as being only a different pronunciation of *Samana*; one devoted to religious meditations for the purifying of his own heart.—*The Rev. D. J. Gogerly's Essays in Ribeiro's (Lee) Ceylon*, p. 272.

† See Clough's *Bálawatára*, p. 89.

‡ Of the *Sámanéró* the ordained elder priests sometimes use the pronouns උන්දෑ and මුන්දෑ.

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are equally applied to a priest after he has been an Upasampadá priest of 10 years' standing. Before, however, he completes his tenth year after ordination, his career is divided into two periods—the first from the date of ordination till his fifth year, and the second from that time until he becomes a *Théra* or "elder." During each of the above periods he obtains the designation of *Nawaka* and *Majjima* respectively. 4. *Bhikshu* (San.), *Bhikkhu* (Pali), *Bik* (Siṃhalese) literally 'beggar' or 'mendicant,' is derived from *Bhikshu* 'to beg.'

In a collective sense *Sanga* is used, and means the whole order collectively—'the priesthood,' 'an assembly or an association of Buddhist priests.' The honorific වහන්සේ is usually applied to *Sangayà*, *Bhikshu*, and *Théra*; and නාන්සේ to *Gana.*

There is a peculiar etiquette in the use of terms of address amongst the priesthood; which seems to have been regulated by Buddha himself, in the sixth Bhanawàra of the *Parinibbána Suttaṃ*, where the following passage occurs :—

"යථාඛෝපනානන්දඑතරහිභික්ඛූඅඤ්ඤමඤ්ඤංආවුසෝවාදෙනසමුදාචරන්තිනඛොමමච්චයෙනඑවංසමුදාචරිතබ්බංථෙරතරෙණආනන්දභික්ඛුනා නවකතරෝභික්ඛු නාමේනවාගොත්තේනවාආවුසෝවාදෙනවාසමුදාචරිතබ්බෝනවක තරේනභික්ඛු ථෙරතරෝභික්ඛු භන්තෙතිවාආයස්මාතිවාසමුදාචරිතබ්බෝ"

'Ánanda, although priests are now in the habit of (indiscriminately) addressing each other with the term *áwusó*; yet after my death this practice should not be continued. Ánanda, by a senior *théra*, a junior (priest) should be addressed either by his *personal* name, or by his *family* designation, or by the appellation of *áwusó*; and by a junior (priest) a senior *théra* should be addressed *bhante* 'lord,' or *áyasmá* 'advanced in years.'

'*Áwusó*' is *ẹvẹtni* in Siṃhalese; *bhante* is *vahansé*; and *áyasmá*, (which means 'thou who art advanced in years' and approximates in sense to the English epithet 'venerable,') is *áyubóvan.* This last is a term of address very common amongst the Siṃhalese, and is frequently employed in addressing persons of rank and age, both priests and laymen. *Áyubóvan* is also the form of salutation amongst

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us, and in the sense of wishing one 'Good morning' in English, the Siṇhalese greet one another—*Áyubówan* 'Long life.' This is a salutation which has no distinction as to rank, caste, or class. It is used by all indiscriminately, by the highest to the lowest, *et vice versâ.*

It is not a little curious to observe that *áwusó* (which is simply a vocative)* has the signification of the English term, 'I say:' this is however in accidental similarity; and the words are no more derived from the same source, than *gargaráyana rẹla,* ගර්ගරායනරෙල (in *Milindappraṣna*) from "gurgling rill;" or *koka kók* කොකාකෝක් from *cocra cȍax.* Speaking of the resemblance in the sounds of words in different languages, I may here observe that although the word *ẹbittayá* "the attendant of the priest," bears a great resemblance to the *ebitikos* of the Greeks, "a bit boy" or a 'stripling,' as stated by Mr. Stark; yet that the word itself is derived from *abhi* 'before,' 'front,' or 'opposite,' and *yukta* 'who or which is;' whence it means "a person who is ever before you;" a "page." I may also here intimate my belief that the Hebrew term *Tirshatha,* applied as a title to the Governor of Judea under the Persians, and mentioned in Ezra ii. 63; Neh. vii. 65; viii. 9; has no connection with තීර්ථක *Tirthaka,* as hinted by Mr. Stark. The former is believed by some to have been derived from the Persian word signifying 'harsh,' and by others from a different word meaning 'fear'; and thence applied to a Ruler or Governor as "the dreaded one." But the latter term *Tirthaka* is from *tirtha* 'to ferry over;' thence applied to a "Religious teacher,"† from his being a person who helps mankind to ford the troublous waters of life. In Ceylon Buddhistical works, it is used to signify "a teacher of a sect different from Buddhism," or a "sectarian," an "unbeliever;" or as Mr. Turnour has rendered it in his Buddhistical Annals, "one of the antagonist creed."

* See Clough's *Bálawatára,* p. 70.

† Bombay Asiatic Society's Journal, July 1857, p. 401. *et seq.*

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To return however to the subject. In accordance with the injunction of Buddha contained in the passage which I have extracted from the *Buddhawaṇsa*, the Sàmaṇèro address the Upasampadá priests *Hámuduruvó*, *Terunnánsé*, *Terunvahansé*, *Áyubóvan*; whilst the latter use towards the former *Tena*, *Bánavá*, *Punchi-unnehé*, *Tamusé*, *Undé*. As amongst the priests themselves of each class, there are different appellations. For, (to use the language of Turnour) "as in the order of ordination one Bhikkhu must be senior to another, an appellation implying equality applied by a junior to a senior Upasampadá is disrestpectful and irreverent."*

I shall here notice a peculiarity arising from sectarian animosity, viz., that the priests of the Siam and Amarapura sects do not, when they meet, salute each other. Amongst other peculiarities which distinguish the one from the other, I may also here mention the fact, that the Amarapura sect differs from the Siamese by having both the shoulders covered with a roll of robe. I will not express an opinion as to the correctness or incorrectness of the innovation: but judging from the conduct of the fathers of the Buddhist faith, the adjustment of the robe, so as to leave one shoulder bare (as is the wont of the Siamese sect) seems to be proper, at least in appearing in an assembly. The reader will find frequent mention of this in Buddhistical writers. I shall content myself with three extracts from Turnour's Páli Buddhistical Annals, in the sixth volume of the Bengal Asiatic Society's Journal.

"The *Thero* Ánando who had attained the arahathood, also repaired to the meeting. 'How did he go'? Saying to himself with the greatest delight, adjusting his robes, *so as to leave one shoulder bare*," p. 517. "Having thus imposed on himself that office, the venerable Upáli rising, adjusting his robe *so as to leave one shoulder bare*, and taking up the ivory-wrought fan, and bowing down to the senior priests took his seat on the *dhammásanan* (pulpit)," p. 519. "The venerable

* Bengal Asiatic Society's Journal, vol. vii. p. 1007.

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Anando then rising from his seat, and adjusting his robes, *so as to leave one shoulder bare*, and bowing down to the senior Bhikkhu, took his place in the *Dhammásanan*, holding up the ivory-wrought fan." p. 521.

This is an ascetic rite, probably borrowed from the *Institutes of Manu*, where it is laid down, (Cap. II., § 193). "Let him always keep *his right arm uncovered*,—be always decently apparelled, and properly composed," &c. Again in Cap. IV., § 58, "In a temple of consecrated fire, in the pasture of kine, in the presence of Brahmins, in reciting the Vèda, and in eating his food, *let him hold out his right arm uncovered*."

Reference is made by Mr. Justice Stark to *Upáli*, one of the priests named in the above extract, and a doubt is expressed as to whether he was identical with *Upáli Maha Siṭu*, the nobleman whose conversation with Buddha is noticed in a passage from the *Amáwatura*, extracted into my "Sidat Saŋgaráwa," p. clvii. They were however different persons. The *priest* Upáli was a barber; but the *nobleman* of the same name was the follower of a *Tírthaka*, an heretic. A brief history of the former is given by the Rev. Spence Hardy in his work on Buddhism, (p.p. 231-2); and the same writer gives the history of Upáli, the *laic* or "householder." (*ib.* p. 266).

Having noticed the want of identity between the two Upális, I shall proceed to consider what Mr. Stark calls "the distinguishing terms characteristic of the *priest* and layman." In one sense, the words *gihi* and *bhikkhu* have the same distinction which *laicus* and *clerus* have; but, generally, they serve to indicate no other difference save that between the *householder* and the *houseless wanderer*, which latter a priest undoubtedly is, by the rigid vows of his order. From the Sanskrit word ගෘහ, *griha* we obtain the term *gṛikapati*, 'lord of the house,' 'landlord;' beautifully expressive of the English word 'host,' as contra-distinguished from *amutta* 'guest' or 'stranger.'

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As applied to the laic only, there are to be found several honorific terms of address in books; as for instance සබඳෙනි, "O youths," පින්වත්නි, "O prosperous," &c. So also as applied generally to the ascetic, we have සිදුකාගත්වතත්තේ, a word adopted from the Páli, which frequently occurs in the *Milindapprasna* in the sense of 'Hail! Your Worship!'

The names assumed by the Buddhist priests are different from those taken by the laity; e. g., Sangha Rakkhita; Dhamma Ratana; Samanatissa; Dhammánanda; Atthadassi; Sumanasára; Sumana; Gunaratana; Jinánanda; Dhammánanda; Dhammaráma; Dhammatilaka; Siri-Sumana; Paññására; Dhammakkhanda; Sóbhita; Suguna; Ratanapála; &c., &c. Some of them are coined, whilst others, like Siddhatta and Ráhula, are those which are found in books. The following passage extracted from the *Buddhawansa*, shews the origin of the word *Ráhula*, which does not signify "eclipsed," as hinted by Mr. Stark.

තස්මිංසමයෙ රාහුලමාතා පුත්තං විජාතාතිසුත්වා සුද්ධොදනමහාරාජා පුත්තස්සතුට්ඨිං පවේදථාතිසාසනං පේසෙසි බොධි සත්තොතංසුත්වා රාහුලෝජාතො බන්ධනංජාතන්ති ආහරාජාකිම්මෙපුත්තො අවචාතිපුච්ඡිත්වාතං වචනංසුත්වා: ඉතොපට්ඨාය. .මෙනත්තාරාහුල කුමාරොත්වෙවහොතුතිආහ.

That is:—

"At this time, Suddhódana heard that (Yasódará) the mother of Ráhula, had given birth to a son; and, desirous of gladdening his son, sent him a message (to announce the event). The Bódisat, on receiving the announcement, exclaimed, 'A *Ráhula* is born!' *A tie has been created!* When the king, having inquired what his son had said, was informed of (*tan wachanan*) that word (i. e. *Ráhula*, the chief word of his son's exclamation,) Suddhódana said 'Let then *Ráhula* (prince) itself be the name of my grandson from henceforth.'"

The names which are used by the *laic* as terms of address towards the elders of the Buddhist church, are generally those given to their native countries; as for instance Míripenné, Karangoda, Bentota, Ambagahapitiya, &c., &c. The titles which

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were anciently given by the Crown to a chief hierarch of the Buddhist church was *Sanga Rája*. (See an instance of this in the extracts in my "Sidat-Saṇgaráwa," p. ccxxvii.) But, when the Siṇhalese Government had ceased to exist, the dignitaries of their church were designated *Náyaka* and *Anu-ṇáyaka* ("the chief" and the "next chief") with the honorific affix of *Terunnánse* or *Unnánsé*.

Treating of the word ලේකාපේඩ්, says Mr. Stark :—

The word is not used however to any other than such priests (a *Théra*). It is not given to *Kapuwá* or god's priest; nor to the *Yakadurá*, or devil's priest; nor to the *Balikárayá*, or planet priest."

He is quite right. No respect whatever was originally shewn to the priests of a worship which had not the sanction of Buddhism. Thus a "devil's priest" was called *Yakkha-dása* (Páli), or *Yakdessá* (Siṇhalese), "the devil's slave." But, as corruptions crept into the religious worship of the Island, from the invasions of Ceylon by the Malabars,* and Yakka worship was gradually introduced by them, 'the *slave* of the devil' became *Yakadurá*, or 'the *teacher* of demonology': and the simple *Kapuwá*† 'god's priest,' was designated '*Kapurála*.' Even here the reader will observe that the honorifics used are such as do not convey much respect towards the professors of the new faith.

The aversion which the Siṇhalese anciently felt to demonology, and, consequently the contempt with which they regarded the professors of that faith, viz., the *Áṇḍi* Fakirs, who were at one time the pest of Ceylon, may be easily gathered from the *Áṇḍi mála*, a book written with the pro-

* See Mr. Silva's Essay in Lee's Ribeiro, p. 274, *et seq.*

† This word is derived from කැප *kępa* 'to set apart,' 'dedicate'—it being usual, when a vow is made to the gods, that as an earnest of one's obligation, or the assurance of the fulfilment of one's vows, to plant a pillar, as it were the foundation stone of the buildings to be thereafter erected for the ceremony. Whence this pillar is called කප් *kap*, and the priest who plants it is thence designated කපුවා *Kapuwá*.

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fessed object of alienating the affections of the misguided natives, who had evinced an attachment to a Pretender to the Siŋhalese throne; and of denouncing the faith which he professed. The writer in reference to the Pretender says that 'it would be far profitable to give to a dog that which is in vain spent for *Wilbáwa*, the devil's slave' &c. :—

විල්බාවේයක්දෙස්සාහට වැඩනැතුවම දෙනදේ
බල්ලෙක්හට දුන්නොත් සොදසිතෙන් දඹයන්කරදේ

And after an immense deal of reproachful language in respect of the religion which his hero professed, the writer thus expresses himself as to the different merits of the worship of Buddhas, gods, men, and devils.

බුදුන්වැඳමොක්පුරපැතුවෝනිරාදුකකටපත්නොකෙනෙක්නෑ න
නිතින්දෙවියන් වැඳපිදුවෝ දිඅසුවාමිස පැරදුනේ නෑ න
රජුන් සේවයකරමෙහරලොව දිනුවොත්ඇත පැරදුනොත් ඇ න
යකුන්හටපිදුකෙනෙක් දෙලොවම පැරදුනාමිස දිනුවේනෑ න

"Those who worshipped Buddha and reached the city of Niwan, have never fallen into Hell: those who worshipped and offered unto gods have never failed their reward: those who served man (kings of this world) have had their reward both good and evil: but those who offered unto devils, were ever lost both in this as in the next world, and was never benefited."

Another class of terms of address to which reference is made are "household words"; and Mr. Stark thinks that they are "generally of a common character, and not words of affection or endearment."

Not so. The terms of endearment amongst the Siŋhalese are nearly as many as those of honor and rank. Take for instance the epithets for "woman," neglected and degraded woman. She is *sonduru* or *vami*, expressive of what Milton describes her to be, the

——"fairest of creation * * and best."

She is *vati* 'wealth,' or 'life of man,' tantamount to the

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expression "the better half," as when Milton describes her to be,

> "Part of my soul, I seek thee, and thee claim
> My other half,"———

Other terms, like those which Mrs. Malaprop thinks, 'profane expressions of endearment,' are not wanting amongst us; but with them, we have no concern here. I may therefore pass on to different other terms by which woman is designated. She is *pamá* 'the tempter;' *sanda* 'moon-like beauty;' *piya* or *kama* 'the darling;' *vilasi* or *kata* 'the very delight of man.' I am free to admit that the Siŋhalese, like other nations, have not failed to notice the frailty, the weakness, and the timidity of woman; and to coin words expressive of such qualities. The word *biri*, (බිරි given by Mr. Stark, being the classic form of the same word,) indicates the timidity of her mind, as තුනුඅඟ *tunu-aṅga* expresses the weakness of her frame; and ලිය *liya*, 'winding shrub,' signifies her dependence on man, like

> ——— "the woodbine, the sweet honey suckle,
> Gently entwist, the female ivy so,
> Enrings the barky fingers of the elm."

If in this respect the Siŋhalese may be accused of want of gallantry, it is, I apprehend, a charge to which they subject themselves in common with the best and most enlightened nations of the West. The reader will find a precedent in the line where Ovid makes Hero write to Leander, thus:—

> *Ut corpus teneris ita mens infirma puellis.*

In a country where the natives closely imitate the manners of the dominant race, one may naturally be inclined to expect that English epithets of endearment are generally used by the Siŋhalese. In my varied intercourse with my countrymen, I have, however, not known more than one instance of the kind, and that confined to a dashing young fellow who had been the domestic servant in an English family. It is possible, nevertheless, that there are other instances of natives using English household terms of endearment; but I may venture

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to assert that the practice is not general, and that it is not likely to be so hereafter. In the instance* referred to by me above, the words used were "my dear." A person who proved the fact gave it as "*dio*"; and between the ignorance of the witness, and the dulness of the Interpreter, a new word appeared; and the Judge took it down "*bui*"—a fact which moreover shows that the natives are not familiar with such terms.

I have considered the titles of address given to males. It may be convenient here to enter into an investigation of those usually applied to the female sex.

A Lady of distinction, such as the wife of a Mudaliyár, is වලව්වෙහාමුදුරුවෝ or වලව්වේ පැමිනිතැන්; she is sometimes addressed by equals වලව්වේමහත්මයා, ලමාඑතනි; or ලමාතනි. A lady who is a grade inferior to the last receives the title of හාමිනේ. It is however the usual address of the wife of a Muhandiram or Appuhami, and of the unmarried daughter of a Mudaliyár. ලමාහාමි is the title of an Árachchi's wife, whilst මහගේ is that of the wife of Kangany, Vidána or Gamarála; හාමි is the honorary designation of a respectable Vellála female of the lower classes. It is sometimes assumed by males of the same standing in society as the females last mentioned, especially in the Southern Province; but it may be observed that it is a term more appropriate to a female.

In the Kandyan Provinces කුමාරිහාමි is the highest title of a lady of distinction, second only to a කුමාරි or Royal Princess. මහත්මයෝ, "Her Highness" is the feminine form of මහත්මයා, which Mr. Stark says on the authority of Clough, is equivalent to "Mr." The former may therefore be regarded as equal to "Mrs.," and is only applied to a gentlewoman; whilst

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* No. 35,800. District Court of Colombo, South, before Judge Langslow, for compelling Defendant to marry Plaintiff—a witness stated: "the defendant addressed the plaintiff 'Ado Hámi,' she him "Pillai;" and when she called him so, he called her "bui" (*Dear*). I believe them to be very endearing erms."—See Judge Langslow's notes of the evidence.

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ළමයා is decidedly the designation of the plebeian female. මැණිකේ which means, literally, "gem," is the term for "gentle lass," although it is frequently used towards those who have attained a good old age. This last term which had once fallen into disuse, is again current throughout the low country, and it is applied in the same manner in which it was originally done, by being applied to the ladies amongst the Siŋhalese.

The above are the honorary titles of the *Vellála* caste, all other castes being entitled to different other designations, such as ආචාරිච්චි and ආචාරි, the wife and daughter respectively of a 'smith'; රිදී 'washer woman,' &c. &c.

My limits forbid my entering more deeply into the subject than I have done. I shall therefore proceed to notice a few other matters of interest, to which Mr. Justice Stark alludes in the essay to which I have so frequently referred. Of these, the terms by which Kandyans designate their children as to size demand attention here. Mr. Stark notices only two, *loku* and *tikiri*, whilst there are no less than five words which convey the respective ages of children or persons in a family. Thus, *loku* is the 'eldest' of a family; *mẹdduma* or 'middle' is the next in gradation or age; *kuḍá* indicates 'small;' *tikiri* 'smaller' still; and *puŋchi* the 'smallest' of all. In the maritime country, however, *tikiri* is not used; and *ẹbittayá*, a term peculiar to the low country, is a 'bit-boy,' as applied to *baba* or 'baby,' smaller than *puŋchá* or 'little one.'

The Páli or Tamil word *aiyá*, probably derived from the Sanskrit *árya** "the respectable," is found in the Siŋhalese; and is used by us to signify 'elder brother'; and *akká*, which is a Sanskrit word for "mother," is adopted in the Siŋhalese to designate 'elder sister.' The use of these terms denote the great respect with which the elder members of a family are treated amongst the Siŋhalese; and it is well known that elder brothers and sisters amongst us are never mentioned or called by their proper names. When the terms *aiyá* and *akká*

* See Pr. Wilson's *Hindú Drama*, vol. I., p. 113, note.

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assume a more endearing form, they are expressed *aiyandi* and *akkandi;* and the same termination *(andi)* is employed when speaking of a mother respectfully, as *ammandi.* The termination, in a similar application of the words *appá,* 'father,' and *bála-appá* or *báppa* 'uncle' is *chchi,* as *appochchi, báppochchi.*

As the above are nominal terms of address peculiar in their use and application, so there are also nominal terminations and verbal affixes in the Siṇhalese, to which I shall allude here. Of nominal terminations, I may mention a peculiarity which is not generally understood. It is in reference to the use of names without honorific affixes. When persons address each other without honorifics, they change the terminations of the name from one vowel sound to another. They do so with a view of conveying respect. Thus for instance *poḍḍá,* 'little one' is changed into *poḍḍé; Justiná* to *Justiné; Cornis* to *Cornisé* &c. Though the latter is the vocative form of the noun, yet that form is adopted in the other cases also, with a view to honor the person spoken of. Where, however, no respect is intended, the proper termination of the name is alone retained.

There are several verbal affixes. Of them, සේක *séká* denotes the highest respect, as in the passage සෙමෙදහාවත ත්සේසගපුඩාසසේක ගණපුඩාසසේක. So does මැනව *meṇawa,* as in the Lord's Prayer, 'Give us this day our daily bread.' අද්දවස්පතා භෝජන අපටඅද්දුනමැනව.

Speaking of verbal affixes in the imperative mood, to convey various degrees of respect to the person addressed, I shall here exhibit a few of the changes which one solitary word undergoes, when applied to different persons. Take for instance එන් 'to come:'

1	දේවයන්වහන්ස	...	to kings ...	අවමැනව.
2	හාමුදුරුවෝ	...	to noblemen ...	සඟපත්වෙන්ට.
3	හාමුදුරුවෝ	...	to Priesthood ...	වඩින්ට or වැඩමකරන්ට
4	උන්නැහේ	...	to a Sámanéra by a Théra	එනවා.

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5	තමුන්නාන්සේ ...	... to equals ...		ආවොත්.
6	ඔන්ඩසි ...	... to inferiors ...		එන්ඩසි.
7	මහත්මයා ...	...	to a gentleman or an equal, respectfully, or husband.	එන්ට or එන්නට.
8	රාලහාමි ...	...		එන්ටකෝ or එන්වා
9	තමුසේ ...	...		එනවාකෝ.
10	නුඹ, උඹ ...	...	familiarly ...	වරෙන්,
11	බොලන් ...	...		වරෙන්කෝ.
12	ඕයි ...	...		එන්.
13	අඩෝ ...	...	to menials or low caste persons.	වර.
14	යෝ ...	...		වරෙන්,
15	බොල or බොලන් ...			වරෙව්වෝ.

In reference to the variety of expressions used amongst the Siņhalese, the following extract from my "Sidat Saŋgará," p. lxiv., may not be out of place here.

"There are numerous words in the Sinhalese which are used towards particular classes of people, e. g., වැඩමකරන්ට 'proceed,' is a term peculiar in its application to the priesthood, whereas ගහපත්වෙන්ට, of the like signification, is applied to the nobility, and යන්ට, පලයන්, පලයන්ඩසි, පල to equals and inferiors of different grades. So likewise වලඳන්ට 'eat' is applied to priests සප්පායවෙන්ට to nobles, කන්ට to inferiors; and the last, with different modifications, such as කාපන්, කනවාකෝ කාපන්, කාපන් ඩසි, කා, කාපිය, to equals and inferiors."

So various are the modes of address, adopted by the Siņhalese towards particular individuals, that the simple ඔවු 'yes,' used in familiar intercourse, is changed into එහෙයි, when the nobility are addressed; and into එහෙමයි, when the priesthood. The simple නෑ 'no' becomes බෝසි, under similar circumstances; and හොඳයි 'good' is changed to යහපති and හොඳමයි.

Having thus considered the principal matters to which Mr. Stark has attracted attention, I shall in the next place notice the "modes of reverence" referred to in the following paragraph.

"There are several modes of reverence or obeisance among the Siņhalese:—The shoes also off: placing the right hand on the breast, and bowing; joining the hands, raising them thus to the forehead, and bowing; falling on the knees, and so doing; and prostration on the face upon the ground."

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No native of the lower orders ever thinks of entering a *walauwa* or "mansion" of a nobleman, without first leaving his slippers at the gate. This is an ancient custom in the East, which was enforced by Europeans for a very long time. Bennet, in his work on Ceylon, (p. 100,) notices a decision of Government* respecting the assumption by natives of shoes and stockings, which they did to avoid being obliged to leave their slippers at the gates of gentlemen whom they visited; and we know of instances in Colombo, where natives of the highest families were refused admission into European houses, because they departed from the ancient custom of leaving their slippers at the door. But, happily, the time are changed! We perceive a great social change in the conduct of Europeans towards natives. From the adoption of English customs we augur happy results, amongst which (although the remark may excite a smile in certain quarters) I may almost predict, the abolition of caste-distinctions and class-prejudices. To proceed:—However stringent was the original custom in regard to going barefooted in the presence of the nobility, there

* "Mr. John Brixius De Zilva, the present assessor of the District Court of Galle, ...who wore shoes and stockings in Court with my unqualified approbation, was refused admission into the Kachcheri with such European appendages. That gentleman felt that, as a British subject, he had as great a right to wear shoes and stockings as those who were of European birth; but as the Collector chose to make a reference to the Governor, which was followed by the most extraordinary decision, that '*His Excellency would not sanction the adoption of the most comfortable portions of the European and Native costumes; and that the Interpreter must choose one or the other;*' Mr. De Zilva relinquished his visits to the Kachcheri, rather than the comforts of his adopted dress. A writer in the *Calcutta Review*, December 1849, p. 381, defends the policy of a similar decision in India; but the reader will perceive how different are the costumes of the turban-clad Hindu, and the comb-wearing Sinhalese, and therefore how very inapplicable are the writer's remarks to Ceylon, even if they can be justified upon other grounds: "How much exitability, for instance, has been shewn (says the writer) in respect to what has been called 'the shoe question.' Taking off the shoe or slipper, was no custom introduced by the English. It was, and has been, the established custom of India for ages. If the natives of India claim a conformity to our customs, let them have it by all means on equal terms. Let them have their purgris or turbans in the ante-chamber. A native of whatever degree is perfectly well aware that he cannot call upon a native of high rank, without submitting to his country's etiquette; and he will conform to it without a demur, though he grudges to do so to an European of equal rank. The Bengalis are the only natives (and only a small section of them) who object to it. Why they do so object we never could comprehend. The Greeks, a far more independent, polished, and intellectual people, always left their slippers in the lobby."

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seems to have been but little distinction in the forms of salutation. According to these forms one is entitled to be saluted (except he be a very low-caste person) in the same manner that he salutes his host; for, in the modes of saluting, by clasping the hands, there is no distinction between the noble aristocrat and the humble plebeian. The etiquette amongst the Siṇhalese is, that a female ought to raise her hands to the forehead, whilst it suffices if a male should only lift them up so high as the tip of his fingers might reach his lips. In the Galle District, it is a serious offence not to return the salutation of a person; and so scrupulous are they in this respect, that the late first Mahá Mudaliyár, Illaṇgakón of Mátara, never failed to return the compliment to all the Siṇhalese who paid him the respect by bowing with an *ẹndili*,*—by which is meant the obeisance made by the clasping of the hands together. Of course he never raised his hands to the face when a *Paduwá* or a *Berakárayá* was the saluter; but even in the case of such persons, he, as is the practice in nearly all the parts of Ceylon where ancient customs are strictly adhered to, made an inclination of his hand or hands, as the case may be, by raising them up in the form of a semi-Salaam of the Hindus. With regard to others of inferior calsses, no distinction is ever shown by those who correctly understand the etiquette on the subject. A Buddhist priest, or Buddha is to be worshipped *pasañga pihiṭuwá*, (පසඟපිහිටුවා) as we read in innumerable passages in the Buddhist scriptures, that is, by touching the ground with five parts of the body of the saluter. This is difficult to be explained without a representation; but if the reader will only fancy a person falling down on his face,† and then lifting up the body supported by the forehead, the two elbows, and the knees—and then putting his clasped-hands to the forehead, he may perhaps get some

* In the *añjali* (Sanskrit) or respectful obeisance, (says Professor Wilson), the head is slightly bowed, the palms of the hands are brought together, and raised literally to the middle of the forehead, so that the tips of the thumbs only are in contact with it. *Hindu Theatre*, Vol. II. p. 108.

† "I fell at his feet to worship him." Rev. xix. 10.

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conception of a person prostrating in the manner indicated by *pasaṅga pihiṭuwá*.*

It is pleasing indeed to see well trained natives make the usual salutation between man and man; for they do it in as graceful a manner as a Frenchman makes a bow. On the contrary, nothing can be more offensive to the sight than the half-English and half-Siṇhalese salutation of some, the *nolens-volens* nod of others, and the ill-looking bow of that foreign people whom a Gajabáhu made the settlers of the Alutkúru Kóralé. Like their outward forms of salutation, their language, too, is a mixture of Siṇhalese and foreign idioms, and is different from that spoken by the real descendants of the Siṇha race.

Amongst the Siṇhalese, a present of some little thing, when made by an inferior to a superior, is considered as a high mark of respect; and to refuse it is to insult the donor. The Natives usually take forty leaves of betel, as the *árghya*† of our Hindu neighbours, on visiting their chiefs. A "pingo," or *kada* or cakes and fruits is not unfrequently presented; and this is ornamented with white tender leaves of the coconut palm. Amongst equals, presents are exchanged as a mark of attention; and, if from a low-caste man, one of a higher caste receives a favor, the latter shows his respect by visiting the former with a pingo, which he takes no farther than the stile of the low-caste man's garden.

Whilst it is a fact that all classes reciprocrate the common courtesies of life, it is also a fact, and one worthy of attention —that the Buddhist priests, who receive the homage of the laic, never return the obeisance of any one.

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* This is the same form of "worship," which the Rev. Spence Hardy in his Easte n Monachism, p. 25, describes as being p rf rmed, "with his forehead to the ground, and touching the ground with his kne s and *toes*." But Mr. Hardy is wrong in saying that the "*toes*" should touch the ground. For "*toes*," read "*elbows*."

† "She com s with an *árghya*, a pr s nt indi ative of respect to a superior. It matters not of what it consists."—*Wilson's Hindu Theatre*, I. p. 312.

This is, perhaps, from a notion that as a "son of Buddha," and indeed, one of 'the three gems of adoration,' the priest is entitled to the same reverence,* which Buddha exacted from all beings. For, it is stated by that sage, in his first discourse in the *Párájiká*, on being remonstrated by Véranja against what he considered an unjustifiable departure from decorum and propriety on the part of Gautama, by not reverently saluting venerable Bráhmins; such as the aged, the honorable, the experienced, and the far advanced in life—that there was not a single being amongst Bráhmas, Gods, Sramaṇas or Bráhmins in the whole universe of the Bráhma, the Déwa, and the human worlds, whom he should reverently salute, in whose presence he should rise, or whom he should invite to be seated.†

The scriptures, too, receive the same reverence from the votaries of Buddha, which they pay to the priesthood. For, as Mr. Justice Stark properly observes "the *Játaka-pota*, or the Book of Incarnations is styled *Játaka-pot-wahansé*." As to the respectful posture in which the scriptures should be listened to, it is stated in the *Lówẹda-saṇgrahaya*, that "one should neither sit on high whilst the *baṇa* is read on the ground, nor stand up whilst it is read on high."—

උඩඉඳිමකිබණනාසන්නේ
බිමැනිවඋඩඉඳිසිටනාසන්නේ

The Rev. Spence Hardy thus notices the subject, in his work on *Eastern Monachism.*

"The Sramaṇa receives worship from the householder, and he forms part of the Saṇgha, in which all Buddhists profess to take refuge, when they repeat the three-fold formula of protection. The priest never make obeisance to any one, and never pay any outward mark of respect. In the books, they are represented as using the word *tó*, a form of the

* "The protection of Saṇgha cannot be received by any one who sits near a priest without permission."—*Hardy's Eastern Monachism*, p. 210.

† The habits of the Siṇhalese in respect of the outward marks of respect and attention to superiors, accord with those of the Hindus; as enjoined by Manu in his Institutes, ii. § 185.—See also, *Tr. Asiatic S.* iii. p. 198., *et seb.*

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second person singular that is offensively low, when a'dressing Kings, or even deities; all other persons use the honorific form of the ve:b. when addressing them, but they never use it in return; they r ceive h nor from all beings, in all forms: but they never give it to any being in any form."—p. 414.

Mr. Hardy is substantially correct in what he states in the above extract; but the remark respecting තෝ *tò*, as being the pronoun used by the priest to the layman, requires qualification. It is possible that this "form of the second person *singular*," occurs in books translated from the Páli into the Siŋhalese; but I have never met with a single passage in any original Siŋhalese work in which a priest is made to address a laic, much less a King, or a God, with a pronoun "that is offensively low." The word that I have always met with in my reading, as the pronoun used by the priest to the laic (except indeed where the Páli ත්වං *twan* is rendered literally into Siŋhalese) is තෙපි *tepi* or තොපි *topi*, the form of the second person *plural*, which I need not inform the reader, becomes like other terms of address when used in the *plural* form, an honorific.*

I shall content myself with five examples:—

1. In the *Attangalu-Waŋsa*, Nanda Mahá Théra is made to address his royal pupil, Siri Saňgabó, who was also his nephew, with තෙපි you thus: ඉක්බිත්තෙන් එක්දවසෙක ඒ කුමාරයන්ගේ මයිල් නන්දමහතෙරුන්නාන්සේ වැඩිවියපැමිනි සිරිසඟබෝකුමාරයන් පිරිත්බැණබණ ඇසූ අන්තයෙහි හිඳවා මෙසේ වදාරනසේක, මහත් නාගෘ ඇති කුමාරයෙනි දැන් තෙපි දත්තාලද බෞද්ධාගම ඇත්තේහිවිය දත්තාලද සියලු බාහිරාශාස්ත්‍රඇත්තේහිදවිය...ඈ. "Afterwards, one day, his uncle Nanda Mahá Théra recited *pirit* to Prince Siri Sangabó, who had attained his majority; and, after he had heard *baṇa*, addressed him as follows: 'Most noble

* The plural form of the second person may be properly used with the epithet. 'Lord,' 'Master,' &c. e. g. ස්වාමිනි තොපි නිශ්චල වූ ගුණ මිහිකතු ගෙන් ලදද, ශක්‍රයානම් තෙපිද බ්‍රහ්මයානම් තෙපිද. 'My Lord (addressing Buddha) did you (තොපි) obtain this unshaken firmness from the goddess of earth? Are you Sakra? Are you Brahma?—*Srwajna-guṇálankára*.

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Prince, you (තෙපි) have now mastered the Buddhistical doctrines, and also the inferior arts and science,'" &c.

2. The same prince having afterwards refused to assume the reigns of Government, is thus addressed by the *priesthood*, upon the earnest solicitations of the populace :—

තෙපි කරණලද කුසල් ඇත්තේසිදුවිය, &c.

" There is much merit that you (තෙපි) have acquired," &c.

3. King Milindu is thus addressed by Nágaséna théra in the *Milindappraṣna ;* and this be it remembered is like the last, a translation from the Pali :—මහාරජාණෙනි තොපගෙවනාහි උපන් නුවර කොතැන්හිදැයි විචාළේය. " He inquired, ' Monarch, where is the city of your (තොපගෙ) birth,' " &c.

4. In the *Thúpawaṇsa* the priest Maha-sup is represented as speaking to King Ajátasatru thus : මහරජඅනාගතයෙහි ධාතූන්වහන්සේට තීර්ථකයන්විසින් උපද්‍රවපෙනෙයි ඒවන උපද්‍රව වල කනුසඳහා තොපවැනි ශ්‍රද්ධාසම්පන්න රජුන් ඇතිකල්හිම එකධාතූනි ධානයක් කරවනබව වටනේයයි වදාළේය. " He said, Monarch, danger is to be apprehended in future to the venerable relics, from (the malignity of) heritics. It is as well, whilst there are kings eminently faithful like yourself (තොප) to make a depository of relics with a view to avert the danger."

5. Maháséna, a God of Swarga is addressed by Assagutta théra with *tepi*, in the following passage in the *Milindappraṣna:*—එම්බා නිදුක්වූ මහාසේන දිව්‍යරාජයාණෙනි මෙසදිව්‍යලෝකය සහිතවූ මනුස්සලෝකයයොහැරම දිවසින්බලන්නාවූ අපි මිලිඳුරජපුරුවන්ගේ කපුරුවූ වාදය බිඳහැර බුඩශාසනයට සංග්‍රහකරන්නට සමර්ථකෙනෙක් තොපහැර නුදුටුම්හ. "Hail your divine Majesty Mahásén̄a ; we who always behold with our divine eyes these six heavens besides the human world, have failed to perceive any one besides yourself (තොප,) who is able to defeat King Milindu in his artful dialectics, and thereby to nourish the religion of Buddha."

I have already made a passing allusion to ආයුබෝවන් *dyu bóvan* "long life," as a term of greeting amongst the Siṇhalese. I may here also mention that we use another term which is

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ආයුරක්ෂාකාරදෙණ්ඩ *áyurakshákara denda* "may your life be preserved;" and it is not unusual amongst us to bid one—*subagaman*, which literally means "fare-well." The usual mode of taking leave amongst the Siṇhalese, is by asking *awasara*, "leave"—although amongst equals we frequently say, මම ගොහින් එඤ්ඤා *mama gohin eññá* "I shall go and *return*," quite different from the Tamil *várum*, simply, "I will come."

With the above my observations on the forms of salutation and modes of address amongst the Siṇhalese, terminate; but, before I conclude, I cannot forbear making a few remarks on what Mr. Stark considers the connection between නිල "the royal colour," and "the title of the great."

"*Nila* was thus perhaps what may be called the royal or government colour, and words of that formation may be so derived. There was a නිලමේ *Nílamé*, at the head of several of the departments. It was the title usually given to any high official, and it is still the title of the great officer of government in the temples.

"The term in question may, I conceive, be so rendered accordingly. Thus when the valiant Gaja-báhu Rája, whose city (unlike the banquet house of a great king as his ministers ignorantly represented) had been entered by an enemy, and many captives taken, at length resolved on an expedition for their recovery, he went out from the council with *Nila Yódayá* (නිලයෝදයා) the great officer of war. These words, however, have been rendered 'Níla the giant,' and 'the great giant Níla,' as if නිල (*nila*) were a proper name, and not like නිලය (*nilaya*) and නිලතල (*nilatala*) an office, place or situation."

There is no more connection between *nila* as a 'colour,' and *nila* as an 'office,'—than there is between *nil* as the verb, "to be unwilling," and *nill* as the noun which signifies "the shining spark of brass in trying and melting the ore." Nor is the appellation of Gaja Báhú's giant, who accompanied him on his expedition to the Sólian country, derived from *nila* (blue colour,) any more than is the *Níla Purána* of the serpent God,* or the great *nila*, that lofty and sacred mountain

* See Asiatic Researches, Vol. xv.

of the Rámáyana, whose summit was of pure and bright gold.*

As respects colour Mr. Stark adds :

"The great colour was නීල (*nila*) the colour of the sky and ocean, and like these, indeed, susceptible of many shades from green to dark blue; but commonly denoting this last, the colour of Vishnu's garment. It is to this colour allusion is so often made in the descriptive writings of the Siŋhalese poets; as when they sing the praises of feet, soft and beautiful 'as the full blown lotus.'

කොමළසුපිපිසරදීසාසද.

"So also when they speak of 'lotus hair,' and the නීලංකාර (*nilaŋkára*) or blue ornament of dark eyes."

The Siŋhalese are, doubtless, great admirers of *blue* as a "colour;" yet it is not to that colour which allusion is so often made in the descriptive writings of the poets, as supposed by Mr. Stark. When in singing the praises of the feet, the poet compares them to කොමළසුපිපිසර "the full blown tender lotus," he only compares them to the broad formation, and the tenderness, of the flower—by no means intending to convey its colour. For *sara* as a name for the lotus, is a *generic term*. It may either be the *white* or the *red* lotus: but it never signifies the *Nelumbium speciosum*, which is distinguished by *nilupul;* as when we speak of a *nilupulęsi*, '*blue*-lotus-eyed,' a term for 'woman,' expressive of her beauty as 'belle,' is in English. The hair, it is true, is compared to *blue* objects, as the tail of a peacock, and sometimes to *green* objects, as the *Valesnaria octandra;*† but never, as I apprehend, to the *lotus:* and the reason for this, (what may seem to be a strange comparison) is—*not* that *nila*, "blue," is considered to be a "great," "government," or "royal, colour"; but that the Siŋhalese did not anciently draw a distinction between *green*, *blue*, and *black*. Thus, when we say, නීලංකාර

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* The fact however, that one and the same word can in the course of time assume varions forms for various objects, proved as it is by numberless examples, requires no further support.—Bopp's Comp. Gram., p. 16.

† See my Sidat Saŋgará, Note Ap. p. xcviii,

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in respect of our eyes, we do not mean, "blue ornament of dark eyes," but simply the darkness of one's eyes, or the dimness which one feels on getting a fit of fainting.

But Mr. Stark is right when he understands the phrase මුවතඹර *lotus-mouth*, as referring to "*red* lips;" for it is remarkable that whilst western nations sing the praises of the *lips* signifying the mouth, in a limited sense; the orientals speak of the *mouth* in a like sense to signify the lips. තඹර is specifically the "*red lotus*," and in comparing the mouth to that flower, we only convey the redness of the lips, as the English bard conveys the same idea, by referring to *Coral*. Speaking of *tambara*, Mr. Stark thinks that "it might well give occasion to the same name as a designation of the Island, තාම්‍රපර්ණී 'Támbraparṇi," *red leaf*, whence the classic appellation for Ceylon, *Taprobane*."

The origin of this word is no longer a matter for speculation. It is well known that it is derived from *Tambavaṇṇa*, "copper colour,"—that hue which seems to be held so sacred amongst the Hindus, that, according to the institutes of Manu, (Cap. iv. § 130), it is an offence to pass over even the "shadow of a *copper-coloured* man"; but I am glad of the opportunity thus presented, of correcting an error into which the learned translator of the Maháwaṃsa has inadvertently fallen.

Dr. Mill, in recording his opinion on "this most authentic History of Ceylon"; says, in the Bengal Asiatic Society's Journal, for December 1836:—

"This real origin of the celebrated name *Taprobane*—(whatever may be thought of the story connected with it in the Maháwansa and which may seem with greater probability to have arisen from the *Tamra-varna*, or copper colour, of its southern cliffs near *Matura*, so well known to Navigators—is one of the points of curious and interesting information which we owe mainly to this publication of Mr. Turnour. Whatever had been before suggested on the probable origin of that name, so little now known except in these Buddhistic Books, as one of the proper names of the great island of *Lanca* or *Singhala-dwipa*, was in the highest degree forced and improbable (*e. g.* the Hind. *Tapuvi-Raban*; or 'the Island of Ravana'.")—p. 830.

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Now Dr. Mill was quite right in thinking it was more probable that this name was derived from *támra-varṇa* (which is *tamba-vaṇṇa* in Páli) "copper *colour*," than from *tamba panniyo*, "copper *palmed*," given in Mr. Turnour's version of the Maháwaṇsa. For, it appears that Mr. Turnour has fallen into this error by taking the text to be *Tamba pannattha panniyo*. And although he has corrected the text in his *Errata*, by giving as the correct word *Tambavanattha pánayo*, he has, nevertheless, failed to rectify the error in the Translation,—an omission by which he has permitted the passage to remain thus :—

"At the spot where the seven-hundred men, with the King at their head, exhausted (by sea sickness, and faint from weakness) had landed out of the vessel, supporting themselves on the palms of their hand pressed on the ground, they set themselves down. Hence, to them the name of Tambapanniyo (copper-*palmed*, from the colour of the soil. From this circumstance that wilderness obtained the name of Tambapanni. From the same cause also this renowned land became celebrated (under that name.)—*Mahawaṇsa*, p. 50.

With all the deference due to the memory of so distinguished an Orientalist as Mr. Turnour, I venture to offer the following translation :—

"The seven-hundred men, with the king at their head, who had come from thence, landed out of the vessel, exhausted and faint from weakness ; and sat themselves down by pressing the palms of their hands on the ground. Whereby their palms became *(tamba-vaṇṇa,)* copper *coloured*. From this circumstance that wilderness obtained the name of *Tambapaṇṇa* ; and from the same cause also this renowned land became designated by that name."

The Ṭíká has the following explanation, to which we append a Translation ; and it fully bears out the correctness of the text and the conjecture of Dr. Mill.

Tambapanni yató ahúti—yató, yasmá tamba bhúmi-rajéhi phuṭṭhatta tésanpàni tambawanno ahósi; tatótasmá sópadésócha évasaddéna gahítametta nagarancha ayan dípóchati imé sabbé tambapáṇina maká ahésunti atthó.

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That is :—*Tambapanni yató ahúti*, &c.—signifies "Since by reason of touching the dust of *copper-coloured* earth, their palms became *copper coloured*; by reason thereof was this province, the city (built therein), and this Island, designated *Tambapáni*," &c.

Having thus ascertained the origin of this classic appellation for Ceylon, I purpose, before concluding, to advert to an important topic suggested by the following remarks on the subject by Dr. Mill :—

"Whenever corresponding words in the *Pali* and *Singhalese* occur, as they do every where, I believe it will be invariably found that the *latter* (the vernacular words of the people of the Kandian and Maritime provinces of Ceylon), *resemble most closely* the Sanskrit original of both:—whereas the former, the sacred language, takes in all words that admit of it, the same sort of peculiar variation which belongs to the tongues of northernmost India,—showing evidently that it was *thence*, and not from *Ceylon*, that the peculiar language as well its institutions of Buddhism came to the Island,—as the *Mahawansi* itself distinctly asserts. To take but one out of the many instances that might be alleged, we may give one of the most remarkable and early names of the Island, viz. *Tambapannyo*, as the Páli name is given in p. 35 of this specimen of the *Mahawansi*, viz. the "copper-*palmed*;" in Sanskrit *Tamra-patni*. Now this Sanskrit form, so different from the *Páli*, is actually the present Singhalese for the same thing, as I was assured by a competent scholar on the Island; and a very convincing proof that it has ever been so, may be seen in the name by which the Island was universally known to the ancients and to Cosmas Indicopleustes when he visited it, viz. *TAPROBANE*. The Greeks would be just as unlikely, to introduce this *r* where it did not exist, as any other languages of India, besides the northernmost ones would be to drop it where it before existed; but this is a universal character of the Prákrit and of the present Hindi, (as seen in this word, *tamba*, copper, *kám*, "word" for *karm*, &c., &c., &c.)—*Beng. A. Society's Journal*, vol. v., p. 830.

Without controverting the main position of the learned Doctor, viz., that there was a connection between the History of Ceylon before the Christian æra, with that of Maghadda, or that part of northern India which we now call Behar* ; I

* "Our language furnishes us with strong evidence against the supposition that it belongs to the *Southern* class of languages."—*Sidat Sangará*, p. lvii.

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may be permitted to remark that the Siŋhalese resembles the *Páli* more than the *Sanskrit;** and this is the case not only in respect to the general structure of the language, but in reference to the particular appellation given to this

———"utmost Indian isle, *Taprobane.*"

For, although Dr. Mill states on the authority of what he regarded a "competent scholar on the Island"—that "the Sanskrit form *(támra-páni)* so different from the Páli, is actually the present Siŋhalese† for the same thing;" it is nevertheless very clear that the Siŋhalese word, *Tammana* for the same place,‡ is derived from the Páli, and not from the Sanskrit. From the fact, that this Island was anciently called *Taprobane* by Western nations, especially the Greeks, who, it is probable to suppose, "would be just as unlikely to introduce this *r* where it did not exist, as any other nations of India (besides the Northernmost ones would be to drop it where it before existed)"—a presumption doubtless arises in favor of this name having been of *Sanskrit* origin. But we cannot give much weight to this presumption, when the same facts upon which it is based may render the truth of a different hypothesis probable, viz., that the Greeks, after the Wijayan æra, were indebted for the name to persons who expressed themselves in Sanskrit, or in a dialect of Sanskrit origin.§ For, whilst it is quite clear from the writings of the

* The Siŋhalese became incorporated with Sanskrit forms only at a very recent date. See *Sidat Sangará*, pp. xxx., liii., clxiv.

† In Siŋhalese historical works, *Tambapanna* is called *Tammana;* See Rájawaliya, and Forbes' Eleven Years in Ceylon, vol. I. p. 11. Also Upham's works, vol. ii., pp. 174-5.

‡ "They returned from their destruction to *Tammana-nuwara*, or the city of *Tammana.*"—*Rájawaliya.*

§ "I am inclined to suggest that the name of Tambapani, Tambapanni, Tambrapanni of the Páli historians, which has been converted into Taprobane by those of the Western world, may have had its origin when Vijaya and his followers made known their first conquest in Lanka to the race from which he was descended, and from whom he had been expelled."—*Forbes*, vol. 1., pp. 10, 11.

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Greeks, that they were indebted to others* at a comparatively modern date, (after the Christian era) for the information recorded by them, it is a fact that ancient rock inscriptions, recorded in India by the great Monarch Aṣóka (B. C. 259,) contains the name *Tamba-panni*, without the Sanskrit *r*, and in the integrity which it occurs in the Mahâwaṃsa ;—and this too, be it remarked, in a sentence which gives two Sanskrit names, "Satiyaput*ra*" "and "Katalaput*ra*"—the Páli of which would be, *Satiyaputta* and *Kataliputta*. I extract the following passage from the *Girnar Inscription*.†

"Every where within the conquered Provinces Raja Piyadasi, the beloved of the Gods, as well as in the parts occupied by the faithful, such as *Chóla*, *Pida*, *Satiyaputra* and *Kataliputra*, even as far as *Tambapanni*—and moreover, within the domains of Antiochus the Greek," &c., &c.

The Siṇhalese word *Tammana*, clearly bears greater affinity to the Páli *Tambapanna*, than to the Sanskrit *Támbrapáni ;* and this relation may be further illustrated by the greater resemblance between those two languages, than between the Sanskrit and Siṇhalese. I propose to exhibit this by presenting the reader with a number of words ; and with that object I submit the following observations :—

An opinion seems to prevail that the Sanskrit is entitled to greater claims to originality than the Páli ; and peculiarities in the formation of the latter language have been exhibited to show that it is a dialect of the Sanskrit, if not immediately transformed from that language.‡ Upon so important and

* There is a river called *Tambrapani* in the southern Peninsula of India, and it is not improbable that the Natives of India pronounced the Páli word (Tambapanni) according to the peculiarity of their own language, and in accordance with the name with which they had been already familiar, viz., *Tambrapani*.

† Bengal Asiatic Soc. Journal, vol. vii., p. 159.

‡ "From an examination of the structure of the Cuneiform-Persic, and Zendic, the oldest forms of the dialects of ancient Persia, it is evident that both have been derived from the Sanskrit ; the relation which they bear to the latter being analogous to the relation of the Páli or Prâkrit to the same—of Italian to Spanish or Latin."—*Journal of R. A. S. Great Britain and Ireland*, vol. xvl, part I, p. 194.

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weighty a question—one, on which the learned world is much too divided—it may not be proper to express an opinion without fully entering into an investigation of the subject: nor is it necessary for my purpose to do so here. My object at present is briefly to show the particular relation which the Siṇhalese bears to the Páli, and to explain that the Sanskrit element in the Siṇhalese, to which Dr. Mill refers in the paragraph above extracted from his notes, is one of comparatively modern introduction.* I shall briefly allude to several peculiarities.

1. It is a phenomenon well known, that in many Sanskrit words a ක් *k* is frequently followed by a ෂ් *sh;* and that in their corresponding Páli terms, the *sh* is changed into the aspirate of *k*. Thus :—

වෘක්ෂ *vṛiksha* into රුක්ඛ *rukkha*, 'tree.'
ක්ෂමා *kshamá* into ඛමා *khamá*, 'forgiveness.'
දක්ෂිණ *dakshiṇa* into දක්ඛිණ *dakkhiṇa*, 'south.'
ක්ෂුර *kshura* into ඛර *khara*, 'razor.'
ක්ෂෙත්‍ර *kshettra* into ඛෙත්ත *khetta*, 'field.'

On comparing the above with their corresponding Siṇhalese words, there is clear evidence that the Páli forms are alone changed into the Siṇhalese. Thus :—

San.	Páli.	Siṇ.
වෘක්ෂ	රුක්ඛ	රුක් 'ruk.'
ක්ෂමා	ඛමා	කමා 'kama.'
දක්ෂිණ	දක්ඛිණ	දකුණු 'dakuṇu.'
ක්ෂුර	ඛුර	කර 'kara.'
ක්ෂෙත්‍ර	ඛෙත්ත	කෙත් 'ket.'

It is unnecessary to multiply examples; but I may mention the following, which easily occur to my mind; භික්ෂු, භික්ඛු, භික් 'an ascetic;' චක්ෂු, චක්ඛු, චක් 'eye;' යක්ෂ, යක්ඛ, යක් 'demon;' මොක්ෂ, මොක්ඛ, මොක් 'niwan;' ලක්ෂ, ලක්ඛ, ලක් 'a lac;' අක්ෂි, අක්ඛි, අක් 'an eye;' &c.

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* See my *Sidat-Sangará*, pp. xlviii, clxxxvii.

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2. Another phenomenon to which I shall advert, is, that when the Sanskrit vowel *ṛi*, which is not known to the Páli and Siŋhalese, is found changed into another vowel in the Páli, that same vowel is adopted in the Siŋhalese. Thus :

San.		Páli.		Siŋ.		
ඍජු	*ṛiju*	උජු	*uju*	උදු	*udu*,	'direct.'
මෘදු	*mṛidu*	මුදු	*mudu*	මුදු	*mudu*	'tender.'
ඍෂි	*ṛishi*	ඉසි	*isi*	ඉසි	*isi*	'a Rishi.'
ඍධි	*ṛidhi*	ඉද්ධි	*iddhi*	ඉදු	*idu.**	.
පෘෂ්ඨ	*pṛishṭha*	පිට්ඨ	*piṭṭha*	පිට	*piṭa*	'back.'
ගෘහ	*gṛiha*	ගෙහ	*geha*	ගේ	*gé*	'house.'
දෘඪ	*dṛiḍha*	දළ්හ	*daḷha*	දළ	*daḷa*	'coarse.'
කෘත	*kṛita*	කත	*kata*	කළ	*kaḷa*	'made.'
හෘද	*hṛida*	හද	*hada*	හද	*hada*	'heart.'
කෘමි	*kṛimi*	කිමි	*kimi*	කිමි	*kimi*	'worm.'
මෘත	*mṛita*	මත	*mata*	මළ	*maḷa*	'dead.'
ශෘගාල	*ṣṛigála*	සිගාල	*sigála*	සිවල්	*sival*	'jackal.'
වෘක්ෂ	*vṛiksha*	රුක්ඛ	*rukkha*	රුක්	*ruk*	'tree.'

3. It is well known that the conjunct *r* found in the Sanskrit is frequently lost in the Páli. When this is the case, the corresponding words in the Siŋhalese bear a greater affinity to the Páli than to the Sanskrit. Thus :—

San.		Páli.		Siŋ.		
තාම්‍ර	*támra*	තම්බ	*tamḅa*	තඹ	*tam̆ba*	'copper.'
වර්ණ	*varṇṇa*	වණ්ණ	*vaṇṇa*	වණ	*vaṇa*	'colour.'
කර්ණ	*karṇṇa*	කණ්ණ	*kaṇṇa*	කණ	*kaṇa*	'ear.'
පර්ණ	*parṇṇa*	පණ්ණ	*paṇṇa*	පත්	*pan*	'leaf.'
අර්ධ	*arḍḍha*	අඩ්ඪ	*aḍḍha*	අඩ	*aḍa*	'half.'
වස්ත්‍ර	*wastra*	වත්ථ	*wattha*	වත්	*wat*	'raiment.'
වක්ත්‍ර	*waktra*	වත්ත	*watta*	වත්	*wat*	'face.'
ඊර්ෂ්‍යා	*irshya*	ඉස්සා	*issa*	ඉස	*isa*	'enmity.'
ක්ෂෙත්‍ර	*kshetra*	ඛෙත්ත	*khetta*	කෙත්	*ket*	'field.'
ශ්‍රද්ධා	*ṣraddhá*	සද්ධා	*saddha*	සැදැ	*sẹdẹ*	'faith.'

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* A word signifying 'the power to go through the air.'

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San.		Páli.		Siŋ.	
අග්‍ර	*agra*	අග්ග	*agga*	අග	*aga* 'chief.'
ස්වර්ග	*swarga*	සග්ග	*sagga*	සග	*saga* 'heaven.'
ශ්‍රමණ	*sramana*	සමණ	*samana*	සමණ*	*samana* 'priest.'
ධර්ම	*dharmma*	ධම්ම	*dhamma*	දම්	*dam* 'doctrine.'

4. The semivowel ඓ *ai* is unknown to the Páli, as it is to the Siŋhalese. When we therefore take Sanskrit words in which this letter occurs, and compare them with their corresponding Páli and Siŋhalese words, we obtain the same results to which we have already adverted; as for example:—

San.		Páli.		Siŋ.	
ඓශ්වර්ය්‍ය	*aiswaryya*	ඉස්සරිය	*issariya*	ඉසුරු	*isuru* 'prosperity.'
ඓරාවණ	*airávana*	ඒරාවණ	*erávana*	එරවණ	*erawana* a name.
කෛලාස	*kailása*	කේලාස	*kélása*	කෙලෙස්	*keles* a name.
තෛල	*taila*	තේල	*téla*	තෙල්	*tel* 'oil.'
වෛර	*vaira*	වේර	*véra*	වෙර	*vera* 'hatred.'

5. The results are precisely the same when we compare Sanskrit words in which the semivowel ඖ *au* occurs with their corresponding words in the Páli and Siŋhalese, in which this vowel sound is entirely lost. Thus, for instance :—

San.		Páli.		Siŋ.	
ඖෂධ	*aushadha*	ඕසධ	*óshadha*	ඔසු	*osu* 'drug.'
ගෞර	*gaura*	ගෝර	*góra*	ගොර	*gora* 'white.'
චෞර	*chaura*	චෝර	*chóra*†	සොර	*sora* 'thief.'
නෞ	*nau*	නාවා	*nává*	නැව	*neva* 'ship.'
මෞක්තික	*mauktika*	මුත්තික	*muttika*	මුතු	*mutu* 'pearl.'
රෞරව	*raurava*	රෝරුව	*róruva*	රෝරුව	*róruva* a name.

6. A silent *s* before certain consonants, which is to be found in the Sanskrit, is lost in the Páli, except perhaps in

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* Vide ante, p. 245.

† The Páli ච is changed into ස in the Siŋhalese, since the former sound is not known to our language. See *Sidat-Saŋgará*, p. liv.

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conjunction with *v*; and this is exactly the case in their corresponding Siŋhalese words. Thus :—

San.		Páli.		Siŋ.		
වස්තු	*wastu*	වත්තු	*wattu*	වත්	*wat*	'riches.'
ස්කන්ධ	*skandha*	ඛන්ධ	*khandha*	කඳ	*kan̆da*	'trunk.'
ස්තම්භ	*stambha*	ථම්භ	*thambha*	ටැඹ	*ṭemba*	'pillar.'
ස්තුති	*stuti*	ථුති	*thuti*	තුති	*tuti*	'thank.'
අස්ථින්	*asthin*	අට්ඨි	*aṭṭhi*	ඇට	*eṭa*	'bone.'
අෂ්ට	*ashṭa*	අට්ඨ	*aṭṭha*	අට	*aṭa*	'eight.'
පෘෂ්ඨ	*pṛishṭha*	පිට්ඨ	*piṭṭha*	පිට	*piṭa*	'back.'
පුෂ්ප	*pushpa*	පුප්ඵ	*puppha*	පුප්	*pup*	'smell.'
ස්ථවිර	*sthawira*	ථෙර	*thera*	තෙර	*tera*	'elder priest.'
තුෂ්ටි	*tushṭi*	තුට්ඨි	*tuṭṭhi*	තුටු	*tuṭu*	'gladness.'
හස්ත	*hasta*	හත්ථ	*hattha*	හත්	*hat*	'hand.'

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PROCEEDINGS OF MEETINGS.

EVENING MEETING,

October 2nd, 1856.

Present :

C. P. LAYARD, Esq.	L. NELL, Esq.
W. SKEEN, Esq.	J. DALZIEL, Esq.
R. DAWSON, Esq.	M. COOMARASAMY, Esq.
L. DE ZOYSA, Esq.	J. NIETNER, Esq.
Dr. WILLISFORD	Rev. C. ALWIS
Captain DUDLEY	Rev. J. THURSTAN
C. LORENZ, Esq.	THE ASSISTANT SECRETARY.

Mr. Layard stated, that the object of the Meeting was to take into consideration the mode in which this Branch of the Asiatic Society could be revived and set in action. The gentlemen present were all aware, that owing to different causes, one of which was the removal from the Island of several gentlemen of known scientific attainments who took an active part in the transactions of the Society, the institution had been dormant for some time. It was however thought desirable that an effort should be made to revive it now, and to obtain for it the support of the public; and it had been intimated to him, that if the Society should succeed in obtaining the support so much desired, it would be in their power to secure the publication of some works of Oriental literature of undoubted importance. Mr. Gogerly, whose absence that night he regretted, spoke in a letter which had been just received, of the assistance, which the Society might, if properly encouraged, derive from its Native members. He also referred to Mr de Alwis, who was prepared with several papers on subjects of interest, and to Mr. de Zoysa, whom he thought competent to undertake the translation of the portion of the Mahâwaṇsa, which had been left untranslated by Mr. Turnour. Mr. Nietner had some very valuable papers on the Natural History of the Island, and he believed there were others in the Island, who would,

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with the opportunity afforded of doing so, render much assistance in various other branches of Science. It was therefore necessary, that the Secretary should be instructed to call a General Meeting for the purpose of electing Members and Office-bearers. He had entertained hopes of obtaining for the Society the services of Captain Oldfield as Secretary; but he regretted to say that that gentleman, who was prevented from attending the meeting by an indisposition, had communicated that his contemplated removal from Colombo would render it impossible for him to accept the office. He had, however, kindly promised, that while at Trincomalie, he would at all times be ready to devote a portion of his time to the Society's service. They had therefore, not only to select a gentleman for the office of Secretary, but also to elect members for a Committee It would be desirable to ask His Excellency the Governor to be the Patron of the Society, and the Hon'ble the Chief Justice, who he, was glad to find took a deep interest in the Society's welfare, as Vice-Patron. Among other matters of difficulty which the Society had to contend with at present, the want of a place to transact business in, was perhaps not the least. He had spoken to several gentlemen on the subject, and it was suggested by some, that this want might be remedied by the erection of a story over the United Service Library. Indeed he could name gentlemen who had promised to subscribe £10 each towards the purpose, which he thought could be easily effected. The Colonial Secretary, with whom he had also conferred, had expressed his willingness to aid in the promotion of the measure, and if a representation were duly made, he (Mr L.) had no doubt that they might be able to secure the sanction of the Government as well as a grant from the Legislature for making such necessary alteration in the U. S. Library, as should render a portion of that building available for the use of the Society, and for a Public Museum. To facilitate the attainment of the object in view, he had, through the kindness of Mr Churchill, procured a plan of the proposed alterations, which he had great pleasure in laying before the Meeting.

Mr. Alwis stated, that owing to certain repairs which the rooms of the Loan Board had lately undergone, it had become necessary to remove the Society's Library and its Museum (which had been in those Rooms) into an apartment of the Colonial Secretary's Office, and that the Society at present had no place in which they could meet or transact business. Owing to the causes to which Mr. Layard had referred, the Society had been dormant for some time past. Its last General Meeting was held so far back as February 1854, and no Committee Meeting had been convened since the 17th August of that year. The Proceedings of those Meetings

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would be found published in the Society's Journal for 1853-54, which had yet to be issued to the subscribers. It was, however, gratifying to notice, that owing to the liberality of Government, and the kindness of the gentleman who presided over its Printing Establishment, the last volume of the Journal, which contained several interesting papers, extending over 300 pages, had been printed without any expense to the Society. It was attributable to this circumstance, that they were able to find on reference to the accounts of the Treasurer, a balance, though a trifling one, in favour of the Society. It amounted to *£8 7s. 3d.*, and would doubtless have been larger, had the subscriptions of the two past years been collected. The omission to do this was not unintentional. It was considered, that while the operations of the Society were unavoidably suspended, it was neither just nor fair to call upon subscribers to pay. If it be the wish of this Meeting that these operations should be revived, it was not only necessary to select a Secretary, but also desirable to place at the disposal of the Society a room in which its Library might be placed, and its proceedings held

After some desultory conversation, in which several gentlemen took part, Mr. Dawson remarked, that public support should not be solicited, until the Society had been completely reorganized. It was most necessary to hold a Meeting, and to appoint a Committee, before an application could be made with anything like reason, either for the assistance of Government or of the public. With regard to the proposal to build a story over the Library, he feared that it was not a practicable one The Library was public property, and although we might contribute to the erection of an upper story, the building itself would remain vested in the public, and not in the Society. He would therefore propose, that the Secretary might be instructed temporarily to rent a house in the Fort, and he thought that the funds of the Society, though small, would enable them to do so, until other arrangements could be made by which the Society might be enabled to obtain a permanent place for the despatch of business.

It was then *Resolved:*

1.—That Mr. Dawson be kindly requested to look for and engage a building in the Fort, in which the Society might be accommodated for the present. Mr. Dawson expressed his assent.

2.—That the Assistant Secretary be instructed to convene a General Meeting of the Society for Saturday the 11th instant, at 4 p. m. Dr. Willisford kindly offered his house for the proposed Meeting, which was accepted.

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3 —That a deputation consisting of Mr. C. P. Layard, Dr. Willisford, Mr Dawson, the Rev. Mr. Thurstan, Mr. J. Alwis, Mr. Coomarasámy and Mr. Lorenz, be requested to wait on His Excellency the Governor, the Hon'ble the Chief Justice, and the Hon'ble the Major General, and to invite them to join the Society, and to allow themselves to be nominated the Patron and Vice-Patrons of the Society respectively. Assented to by the Gentlemen nominated as a deputation.

JAS. ALWIS,
Asst. Secretary.

GENERAL MEETING,

October 11th, 1856.

Present :

The Rev. D. J. GOGERLY, in the Chair.

The Rev. J D. PALM	Capt. DUDLEY
C. P. LAYARD, Esq.	W. SKEEN, Esq.
J. BAILEY, Esq.	C. A. LORENZ, Esq.
GEORGE LEE, Esq.	Dr. WILLISFORD
L. DE ZOYSA, Esq.	J. NIETNER, Esq.
M. COOMARASAMY, Esq.	THE ASSISTANT SECRETARY.
R. DAWSON, Esq.	

Read the proceedings of the last Evening Meeting. Mr. Layard said, that in accordance with the 3rd Resolution just read, he had spoken to His Excellency the Governor intimating to him, on behalf of the Society, that a deputation was appointed to wait upon him, and that His Excellency expressed his willingness to receive them at a time which he would afterwards appoint. Mr. Dawson said, that he had made inquiries, and had engaged at a rental of £1 per month, two rooms behind the Chamber of Commerce, and that in his opinion they were sufficient to hold the Society's Museum and Library. If, however, they were deemed insufficient to hold the Society's General Meetings, he had no doubt that the Chamber of Commerce would, on such occasions, gladly accommodate the Society within their Rooms *Resolved*, that the rooms engaged by Mr. Dawson be rented on behalf of the Society at £1 per month, commencing from the 1st November next.

The Assistant Secretary laid before the Meeting a Memorandum in which the Committee of 1854 resolved to discontinue the services of the Society's Taxidermist, and to appoint a peon at a salary of £1 per month. He stated at the same time, that the Society had no peon at present, and that it would be desirable to engage one, especially to take charge of the Society's new rooms.

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Mr. Skeen drew the attention of the Meeting to the state of the Society's finances, and laid on the Table the accounts, shewing a balance in favour of the Society of £8 7*s.* 3*d.*

Read a letter from the Secretary of the Auckland Museum to Mr. Dawson, requesting that that gentleman would use his influence with the Ceylon Branch of the Royal Asiatic Society, to forward to the above Institution, some of the productions of this Island.

Resolved, on the suggestion of Captain Dudley, that a letter be written to Colonel Hope, requesting that he would be pleased to communicate to this Society the result of his Meteorological observations.

The following Gentlemen were then proposed and elected Members of the Society :—

J. Bailey, Esq.	Proposed by R. Dawson, Esq. Seconded by C. P. Layard, Esq.
J. Nietner, Esq.	Proposed by Dr. Willisford. Seconded by R. Dawson, Esq.
Major T. Skinner.. ...	Proposed by C. P. Layard, Esq. Seconded by R. Dawson, Esq.
Colonel Hope	Proposed by C. P. Layard, Esq. Seconded by R. Dawson, Esq.
F. Churchill, Esq. ...	Proposed by C. P. Layard, Esq. Seconded by R. Dawson, Esq.
Captain Gosset	Proposed by C. P. Layard, Esq. Seconded by R. Dawson, Esq.
L. Nell, Esq.	Proposed by J. Alwis, Esq. Seconded by C. A. Lorenz, Esq.
H. Ball, Esq.	Proposed by J. Alwis, Esq. Seconded by R. Dawson, Esq.
The Rev. J. Thurstan ...	Proposed by R. Dawson, Esq. Seconded by C. P. Layard, Esq.

The Office-bearers and Committee, with the Patron and Vice-Patrons of the Society for the current year, commencing from this date, were then nominated and appointed as follows :—

Patron :

His Excellency the Governor of Ceylon.

Vice-Patrons :

The Hon'ble the Major General.

Sir William Carpenter Rowe, Chief Justice.

The Right Rev. the Lord Bishop of Colombo.

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President:
The Hon'ble C. J. MacCarthy, Esq.

Vice-President.
The Rev. D. J. Gogerly.

Secretary:
Dr. Willisford.

Assistant Secretary:
James Alwis, Esq.

Treasurer:
C. A. Lorenz, Esq.

Librarian, Curator, and Corresponding Secretary:
J. Nietner, Esq.

Committee:

George Lee, Esq.
C. P. Layard, Esq.
M. Coomarásamy, Esq.
Major Skinner.
W. Skeen, Esq.
Dr. J. B. Misso.
L. de Zoysa, Esq.
R. Dawson, Esq.
L. Nell, Esq.
Rev. J. Thurstan.

The Assistant Secretary laid on the table two papers which he proposed to read, viz., a translation of the *Attanagala-waṇsa*, or the History of Three Kings, comprising an account of King Saṅgatissa, during whose reign was set up the so-called "glass pinnacle" which was at present a subject of much inquiry in England. Also a paper on "The Titles of Address amongst the Siṇhalese."

Mr Layard presented a paper on the "Principles of Siṇhalese Chronology," by the Rev. C. Alwis. Mr. Nietner stated, that he had several Entomological papers to present to the Society, and that he would be glad if steps were taken at once for their speedy publication.

The Chairman remarked, that according to the Rules of the Society, it was desirable to submit all papers to a Reading Committee for their approval, before their publication could be sanctioned.

Resolved, that owing to the lateness of the hour, the subject of the appointment of a Reading Committee be deferred till the next General Meeting.

Resolved, that the Treasurer be requested to collect subscriptions for the current year, commencing from the 1st instant, and that the next General Meeting be held in the course of November next.

The business of the Meeting having ended, a vote of thanks was given to the Chairman, and the Meeting separated.

D. J. Gogerly.

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GENERAL MEETING,

November 11th, 1856.

Present :

The Rev. D. J. Gogerly in the Chair.

L. Nell, Esq.
M. Coomarasamy, Esq.
C. P. Layard, Esq.
J. Bailey, Esq.
W. Skeen, Esq.
C. A. Lorenz, Esq.
L. De Zoysa, Esq.
Rev. J. D. Palm.
Rev. J. Thurstan.

The Secretary.
The Assistant Secretary.

The Proceedings of the Meetings of October 11th and November 1st, having been read and explained, the Secretary called attention to the Resolution of the 11th October, referring to the appointment of a Reading Committee.

Resolved, that the following gentlemen be requested to act as such :—M. Coomarasamy, Esq., The Rev. D. J. Gogerly, L. Nell, Esq., J. Neitner, Esq., J. De Alwis, Esq.

Resolved, that the following gentleman be elected a Corresponding Member of this Society, Dandries De Silva Gooneratne, Mohandiram of Bentotte.

Proposed by C. Lorenz, Esq.

Seconded by H. Muttukistna, Esq.

Resolved, that the Rev. B. Boake be elected an Ordinary Member of this Society.

Proposed by C. P. Layard, Esq.

Seconded by J. Bailey, Esq.

Mr De Alwis then proceeded to read his Papers, entitled "Native Titles of Address," and "The *Attanagalu-wansa.*" *Resolved*, that these papers be referred to the Reading Committee.

Mr. Coomarasamy having read a paper entitled a "Synopsis of the *Saiva Siddántam*, or The Religious Philosophy of the Hindoos." *Resolved*, that it be referred to the Reading Committee for report.

The first Number of the Society's Journal being out of print, and frequent applications being made for the same, it was resolved that Mr. Skeen be requested to reprint it, and to furnish 100 copies to the Society.

Jas. Alwis,
Assistant Secretary

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GENERAL MEETING,

February 27th, 1857.

Present:

The Rev. B. BOAKE in the Chair.

J. NIETNER, Esq.	L. NELL, Esq.
C. P. LAYARD, Esq.	M. COOMARASAMY, Esq.
W. SKEEN, Esq.	Rev. J. KATS.
H. MUTTUKISTNA, Esq.	L. DE ZOYSA, Esq.

THE SECRETARY.

The Minutes of the last Meeting having been read and confirmed,

Mr. C. P. Layard suggested, that as some of the specimens of Natural History were evidently falling into decay, the Secretary be authorized to incur any necessary charges in maintaining them.

The question having been discussed, it was resolved accordingly.

Resolved, that Messrs. Layard, Nietner, Skeen and Willisford, be appointed a Sub-Committee to arrange and report on the Library and Museum.

L. Leisching, Esq., having been proposed by C. P. Layard, Esq., and seconded by J. Nietner, Esq., was elected an Ordinary Member.

F. W. WILLISFORD,
Secretary.

ANNUAL MEETING,

January 21st, 1858.

Present:

Dr. F. H. KELAART, in the Chair.

The Rev B. BOAKE.	Dr. WILLISFORD.
M. COOMARASAMY, Esq.	W. SKEEN, Esq.
J. ALWIS, Esq.	J. CAPPER, Esq.
L. DE ZOYSA, Esq.	

The Minutes of the last Meeting having been read, the Secretary proceeded to read the Report of the Committee for the past year.

The Ceylon Branch of the Royal Asiatic Society was reorganized in October 1856, and having secured rooms for its Library and Museum, affording far greater accommodation than had previously been the case, has now 37 resident and 32 non-resident Members. To this number, it is hoped there will be many accessions in the course of the present year.

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The return to Ceylon of Mr. Capper, one of the originators of the Society, is an event from which the Committee augur many and permanent benefits. His former services are sufficiently conspicuous to need more than a passing observation. The palmy days of the Society were those in which that gentleman officiated as Secretary with unflagging interest, and the most constant attention. To the same duties he has kindly signified his willingness again to devote his leisure and abilities; and the Committee have the greatest satisfaction in submitting his name as Secretary, among the List of Office-bearers for the ensuing year, conjointly with Mr. Alwis, to whom the Society owes considorable obligation for his present services.

From other causes also, the Committee anticipate for the future more vigorous action in this branch of the Royal Asiatic Society. During the construction of the Railway, and from the contemplated sojourn in the Island of an enlarged Military force, many scientific gentlemen will probably arrive, from whose enlightened research much may be expected, and who will doubtless gladly avail themselves of the facilities afforded by this Society for the prosecution and publication of their investigations.

From the Treasurer's account it will be perceived, that the income of the Society for the last 14 months has been £47 1*s* 9*d*., exclusive of subscriptions not yet collected. Of the amount already collected, £25 16*s*. 5*d* have been expended, leaving a balance of £21 5*s*. 4*d* in the Treasurer's hands. Against this balance, however, there is a liability of nearly £14 for house rent, for which as yet no demand has been made; and considering that the purchase of several new works on Oriental Literature is thought desirable, the necessity for increased aid in the way of donations and subscriptions is manifest. Indeed, were it not for the liberality of the Government in permitting the Journal of the Society to be printed free of expense at the Government Press, the funds of the Society could not have borne the outlay necessary for the publication of its papers. This arrangement, however, while it has had the effect of saving considerable expenditure, and has enabled the Committee to issue their Journals in a superior style, is yet attended with some inconvenience, which the Committee hope, with the sanction of the Society, they will shortly be able to obviate. The inconvenience alluded to, is the delay, which from the large amount of work required for Government purposes, necessarily demanding the immediate attention of that establishment, inevitably takes place in the issue of the Society's Journal. To this cause is attributable the non-appearance of a reprint of the first Number of the Society's Journal, which had been resolved upon, and of which copies are not now to be had; and the delay that has arisen in the publication of the fourth Number of the new series, of which only 100 pages have been completed. To remedy this evil,

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it is proposed that the Society should engage a Compositor, to be employed under Mr. Skeen upon the papers now in hand, so as to enable him to issue the forthcoming Number at an early date.

Your Committee bring this subject thus prominently before the Society, as they have had several applications for complete sets of the Journals, not only from subscribers, and scientific gentlemen visiting Ceylon, but also from Oriental scholars in England, which they have been unable to comply with, from the cause already stated.

The Journal now in course of publication will contain a larger amount of information than any of its predecessors, and of a character interesting alike to the scholar, the antiquary, and the man of science. It will consist of papers by Mr. Nietner, describing numerous new species of Ceylon Coleoptera; a Translation of certain chapters of the Mahawanse, describing the magnificent works for irrigation constructed by King Parakkrama Bahoo, A D, 1153-1186, with an Introduction and Notes by Mr. De Zoysa; a Translation of the *Attanagalu-wansa*, or the life of Sri Sanga Só, with an Introduction and Notes by Mr. J. Alwis; an Essay on Hindu Philosophy, by Mr. M. Coomarasamy; a Paper on the Sinhalese Method of computing Time by the Rev. C. Alwis; and a Paper on Honorary Titles and Modes or Salutation among the Siŋhalese, by Mr. J. Alwis:—to which it is proposed to add a Paper on Siŋhalese Music by Mr. L. Nell; one on new and interesting species of Nudibranchiate Molluscs, Sea Anemones and Planaria, found in the Harbour of Trincomalie, by Dr Kelaart; and also a paper by Mr. J. Alwis, on the supposed identity between Nágasena, of Budhistical Annals, and Nágajuna, the character who holds a distinguished place in the Rája Tarangini The three last papers will be read to the Society, and the Committee have no doubt but they will be found of sufficient interest to be submitted to the Committee of Papers with a view to their publication.

Your Committee desire to bring to the notice of the Society, the state of its Library and Museum

In addition to the Reports and Medals of the Great Exhibition of 1851, entrusted to the Society, the Committee have to acknowledge the presentation by His Excellency the Governor, of sixteen volumes of the original prospectuses of the various exhibitors; the Reports and Medals of the Paris Exhibition, awarded to this Island; and the Report, &c., of the Madras Exhibition. They also beg to acknowledge the receipt of many valuable works in the course of the past year.

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These presentations and donations invest your Society with a character and importance which it is desirable to maintain. As the only Literary and Scientific Institution in the Island, the value of its Library cannot be over-estimated. Travellers from several parts of Europe, to some of whom your Committee have lately afforded access, have thankfully acknowledged its worth. And to the Scholar and the Orientalist it affords a fund of knowledge which is elsewhere sought in vain.

In view of these considerations, therefore, your Committee recommend the purchase of all works having reference to Ceylon, with which the Library has not as yet been furnished; and also the acquisition of many Oriental works of undoubted interest and usefulness, among which may be enumerated, several of Professor Wilson's publications, including his Sanscrit Dictionary, and Grammar, and the *Lalita Vistra*, the legendary Life of Budhu, now being published in the Bibliotheca Indica at Calcutta.

The Society's Museum, the Committee regret to state, has, for some time past, from the want of a Curator, been greatly neglected. This want they hope to remedy, by the appointment to that office of a gentleman who has signified his willingness to discharge the duties of the appointment until the Society may be in a position to effect better arrangements. Considering how rich Ceylon is in natural productions, it is to be lamented that the funds of the Society will not allow of the appointment of a salaried Curator and Taxidermist.

The Committee see no reason why Ceylon should not, aided by Government, obtain a Museum, similar to those which now flourish in South Africa, and in the Presidencies of India. The report of the former has been forwarded to your Society, by order of His Excellency the Governor of the Cape, with a letter from Mr. Edgar Layard, the Curator, in which he expresses a hope that "the Society may be disposed to sanction a system of mutual exchange."

The Committee would, in conclusion, urge upon the Members individually the desirableness of increased efforts on behalf of the Society.

To the resident Members in Colombo they would recommend the resumption of the Evening Meetings, from which in times past much benefit was derived. In the language of a former Report, they "have a sensible influence on the prosperity of the Society, tending as they do, to the opening up of new subjects of enquiry, and generally imparting additional vigour to the efforts of its Members."

Joint Secretaries { F. W. WILLISFORD.
J. ALWIS

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TREASURER'S ACCOUNT.

	£	s.	d.		£	s.	d.
1856.				1856.			
Nov. and Dec. Receipts ...	32	7	9	Nov. & Dec. Disbursements	8	14	9
1857.				1857.			
Jan. to Dec. Receipts ...	14	14	0	Jan. to Dec. do	17	1	8
				Balance in hand	21	5	5
	£47	1	9		£47	1	9

C. A. Lorenz, *Treasurer.*

The Report having been adopted,—It was *resolved*, that Mr. Skeen be authorised to engage Compositors at the Society's cost to hasten forward the Journal.

The Secretary and Librarian were authorised to purchase any new works on Ceylon, and to submit any others to the Committee for purchase.

The following Gentlemen were then ballotted for, and declared elected as Members of this Society :—

J. Maitland, Esq.	Proposed by J. Alwis, Esq. Seconded by W. Skeen, Esq
J. H Marsh, Esq.	Proposed by J. Capper, Esq. Seconded by the Rev. B. Boake.
F. J. De Saram, Esq.	Proposed by Dr. Willisford. Seconded by Dr. F Kelaart.
C. Kriekenbeck, Esq.	Proposed by Dr. Willisford. Seconded by J. Alwis, Esq.
R F. Morgan, Esq.	Proposed by J Alwis, Esq. Seconded by J. Capper, Esq.
J. A Dunuwille, Esq. .	Proposed by M. Coomarasamy, Esq. Seconded by J. Alwis, Esq.
E. Ormiston, Esq.	Proposed by Dr. Willisford. Seconded by J. Capper, Esq.

The Secretary laid on the table letters from the Cape Society of Natural History, and the New Zealand and Batavian Society, and it was resolved that he be instructed to reply to them forthwith and to forward copies of the Society's Journal.

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The following Members were then proposed and erected as the Office-bearers for the current year :—

Patron :

His Excellency the Governor.

Vice-Patrons :

The Honorable Major General Lockyer.
The Honorable Sir C. J. MacCarthy, Colonial Secretary.
The Right Rev. The Lord Bishop of Colombo.
The Honorable Sir W. Carpenter Rowe, Chief Justice.

President :

The Rev. D. J. Gogerly.

Vice-President :

The Rev. B. Boake.

Secretary:

J. Capper, Esq.

Assistant Secretary and Librarian :

James Alwis, Esq.

Treasurer :

C. A. Lorenz, Esq.

Curator :

J. Maitland, Esq.

Committee :

C. P. Layard, Esq.
Dr. F. W Willisford.
Geo. Lee, Esq
M. Coomarasamy, Esq.
The Rev. B. Boake.
W. Skeen, Esq.
R. Dawson, Esq.
Captain Dudley.
J. H. Marsh, Esq.
L. de Zoysa, Esq.
L. Nell, Esq.

Reading Committee :

The Rev. D. J. Gogerly.
The Rev. B. Boake.
C. A. Lorenz, Esq.
Louis Nell, Esq.
L. de Zoysa, Esq.
James Alwis, Esq.
M. Coomarasamy, Esq.

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Donations to the Library during the year 1857 :

Smithsonian Contributions to Knowledge, vols. VII and VIII.

Smithsonian Report for 1854.

Eighth Annual Report of the Smithsonian Institution.

Essay on the Architecture of the Hindus.

Bombay Asiatic Society's Journal for July 1857.

Same for October 1844.

Journal of the Royal Asiatic Society of Great Britain, No. XV. part 2.

Two Maps of Assyria and of ancient Nimroud.

Atlas of Geological Papers of Western India.

Geological Papers on Western India.

Constitution and Bye laws of the New Orleans Academy of Sciences.

Handbook of Siŋhalese Conversation, presented by the Rev. C. Alwis.

Donations through the Government of Ceylon during 1857 :

Exhibitor's Prospectuses of Exhibition of 1851, 16 vols.

Catalogue of Paris Universal Exhibition of 1855.

Catalogue of Works on the Great Exhibition of 1851.

Jury Reports on the Exhibition of 1855.

First Report of the Commissioners for the Exhibition of 1851.

Third do do do

Report of the Management of the British part of the Paris Exhibition.

Report of the Juries of the Madras Exhibition.

Official Descriptive Catalogue of do

Report of the Madras Exhibition of Raw Products.

Madras Exhibition Catalogue 1855.

Official Catalogue of the French Exhibition.

Report of the Cape Exhibition in 1855.

Report of the Committee thereon.

3 Certificates for the Island of Ceylon, by the Paris Exhibition.

4 Medals—three Bronze and one Silver.

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